Product data sheet E510s Variable speed drive E510-415-SH3F-IP20/11KW/15HP/380-480V

Features

- Advanced Sensorless Vector Control
- Integrated Safety Torque Off
- Fire Mode
- PTC connection
- Built-in PID controller and PLC function
- Simple settings and operating
- PTC connection
- Built-in Modbus Communication (RS485)

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- Built-in BACnet
- Option Communication cards

Component name		E510s						
Horse Power(HP)		15						
Suitable Motor Capacity		11						
Capacity(KW)								
Rated Output Cur		24						
Rated Capacity(k		19.1						
Input Voltage Ra		Three-phase 380~ 480V, 50/60Hz						
Allowable Voltag	, 	-15%~+10%						
Output Voltage r	ange(V)	Three-phase 0~480V						
Input current(A)		31						
Allowable Mome Time(Sec.)	ntary Power Loss	2.0						
Enclosure		IP 20						
Control Mode		V/F, SLV, PMSLV						
	Output Frequency	0.01~599.00Hz (V/Hz)						
	Starting Torque	150%/3Hz(V/F), 150%/1Hz(Vector)						
	Speed Control Ratio	1:50						
		Digital input: 0.01Hz						
	Setting Resolution	Analog input:0.06Hz/60Hz						
		Keypad: Set directly with ▲ ▼ keys or the VR on the						
Frequency		Keypad						
	Setting	External input terminals : AI+AI2 (0/2-10V, 0/4-20mA),						
		Embedded potentiometer,						
		Multifunction input UP/DOWN,						
		Setting frequency by communication method.						
	Frequency Limit	Lower and upper frequency limits,						
		3 skip frequency settings.						
		Keypad Run, Stop button.						
Run		External terminals:						
	Operation Set	Multi- operation-mode(2 or 3 wire selection),						
		Jog operation.						
		Run signal by communication method.						
Main Control Features	V/F Curve Setting	15 fixed curves and 1 customized curve.						
	Carrier Frequency	1~16KHz						
	Acceleration and	2 sections of acceleration /deceleration time setting (0.1~ 3600.0						
	Deceleration	Sec),						
	Control	4 of S curve setting.						

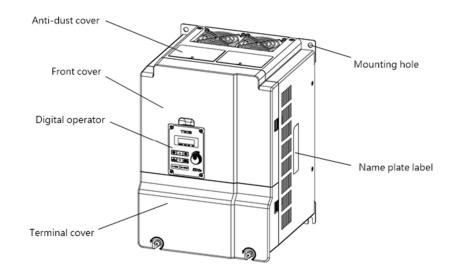


Multifunction Relay Output 22 functions (refer to group3 in the manual). Multifunction Analog Output 5 functions (refer to group3 in the manual). Multifunction Analog Output 5 functions (refer to group3 in the manual). Main Features Sutchos (refer to group4 in the manual). Display LED Overload detection, 16 pre-set 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, Fire mode, Multi-Pump function. Display LED Parameter, Parameter value, Frequency, Line speed, DC voltage, Output voltage, Output current, PID feedback, Input and output terminal status, Heat sink temperature, Firmware version, Fault list. LED Status Indicador Run / Stop / Forward / Reverse, and etc. Overload Protection OL1 Electrical overload protection curve, OL2 HD 150% for 60s, ND 120% for 30s. Over Voltage 400V class: DC>80V, Momentary Power Loss Restart Inverter auto-restart after a momentary power loss. Stall Prevention Stall prevention for Acceleration/ Deceleration/ Operation. Short-circuit Output Terminal Electronic Circuit Protection. Functions Grounding Fault Electronic Circuit Protection. Other Protection Functions Electronic Circuit Protection.		Multifunction Input	35 functions (refer to group3 in the manual).						
Analog Output S functions (refer to group in the manual). Main Features Overload detection, 16 pre-set speeds, Auto-run, Acc/Dec witch(2 stages), Main/Alt run command select, Main/Alt frequency command select, PID control, Torque boost, V/F Start frequency, Fault reset, Fire mode, Multi-Pump function. Display LED Parameter value, Frequency, Line speed, DC voltage, Output voltage, Output corrent, PID feedback, Input and output terninal status, Heat sink temperature, Firmware version, Fault list. LED Status Indicador Run / Stop / Forward / Reverse, and etc. Overload Protection OL1 Electrical overload protection curve, OL2 HD 150% for 60s, ND 120% for 30s. Over Voltage 400V class: DC-880V, Under Voltage 400V class: DC-880V, Under Voltage 400V class: DC-880V, Under Voltage 400V class: DC-880V, Verrototage 400V class: DC-880V, Voltage 400V class: DC-880V, Voltage 100 vertoid set stat Short-Circuit Output Electronic Circuit Protection. Short-Circuit Output Electronic Circuit Protection. Functions Short-Circuit Curput Built-in BAChet communication for one to one or one to many. Built-in BAChet communication for not to one or one to many.		Multifunction	22 functions (refer to group3 in the manual).						
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Voltage, Output voltage, Output current, PID feedback, Input and output terminal status, Heat sink temperature, Firmware version, Fault list. LED Status Indicador Run / Stop / Forward / Reverse, and etc. Overload Protection OL1 Electrical overload protection curve, OL2 HD 150% for 60s, ND 120% for 30s. Over Voltage 400v class: DC>820V, Under Voltage 400v class: DC>830V, Momentary Power Inverter auto-restart after a momentary power loss. Stall Prevention Stall prevention for Acceleration/ Deceleration/ Operation. Short-circuit Output Terminal Electronic Circuit Protection. Other Protection Functions Protection for overheating of heat sink, Fault output, Reverse prohibit, Prohibit for direct start after power up and error recovery, Parameter lock up, STO (Safety Torque Off). Built-in RS485 communication for one to one or one to many. Built-in BACnet communication for building control. (Ex: Fire protection system, Air conditioning system, Monitoring system and Access control system). brake transistor Built in. Communication control Standard built-in RS485 communication (Modbus), one to one or one to many control. (Ex: Fire protection system, Air conditioning system, Monitoring system and Access control system). brake transistor Built in. Communication control Standard built-in RS485 communication (Modbus), one to one or one to many		Main Features	switch(2 stages), Main/Alt run command select, Main/Alt frequency command select, PID control, Torque boost, V/F						
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ShockAmplitude : 0.3mm (10Hz to 50Hz), Acceleration : 2G (50Hz to 150Hz), (According to IEC60068-2-6 standard).		Humidity							
		Shock	Amplitude : 0.3mm (10Hz to 50Hz), Acceleration : 2G (50Hz to 150Hz),						
		Enclosure							



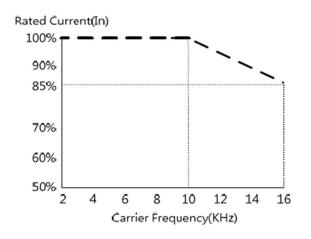
	Altitude	It is required to derate 1% of output current at each additional 100m, the maximum altitude is 2000m.
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External View



Inverter De-rating Based on Temperature

Curves below show the applicable output current de-rate due to setting of carrier frequency and the ambient operating temperatures of 40 and 50 $^\circ\!C$.



Notes:

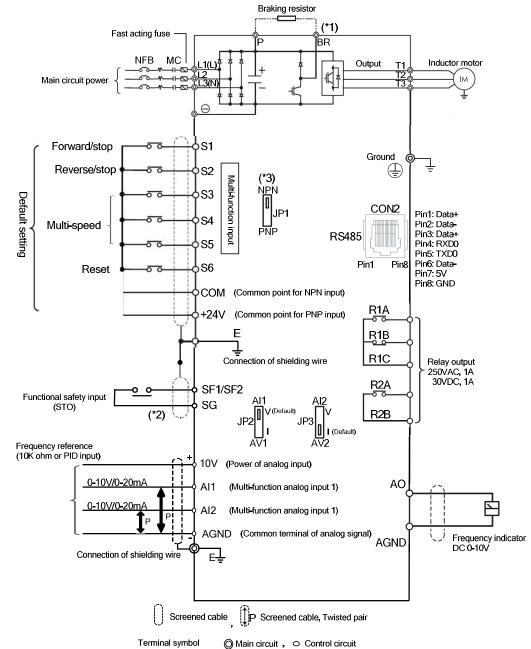
•••••••• De-rate curve for ambient temperature of 40 °C

■ ■ ■ ■ De-rate curve for ambient temperature of 50 °C

TEC

Product data sheet

General Wiring Diagram (single phase)



Remark¹

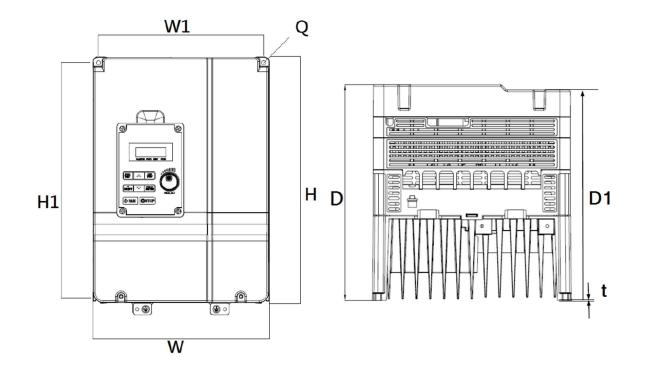
(*1) Only the IP20 200V 0.5-25HP and 400V 1-40HP with built-in braking transistor provide terminal B2. The braking transistor can be connected directly between P and BR.

(*2) Safety input connector (SF/SG) should be shorted so that inverter outputs properly. When the safety input is used, please be sure to remove the short-pin between SF/SG.

(*3) The multi-function digital input terminals S1-S6 can be set to Sink(NPN) and Source(PNP) by JP1.



Dimensions



Dimensions in mm (inch) Inverter Model									Net Weight in kg/(lbs)			
	w	W1	W2	н	H1	H2	D	D1	E	t	Q	
E510-415-SH3F	186.9	175	176	260.9	249.8	273	202.6	197.6	76.7	6.5	M4	6.7/ (14.8)
	(7.36)	(6.89)	(6.93)	(10.27)	(9.83)	(10.75)	(7.98)	(7.78)	(3.02)	(0.26)		

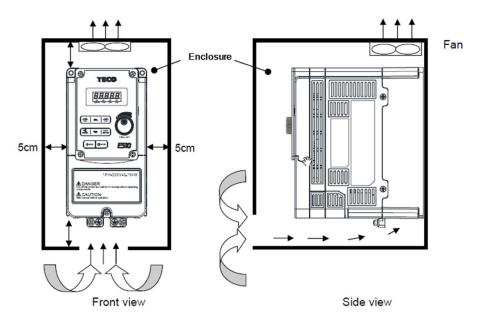


Installation Spaces

Provide sufficient air circulation space for cooling as shown below. Install the inverter on surfaces that provide good heat dissipation.

Single unit installation

Install the inverter verticality to obtain effective cooling



Side by side installation

Provide the necessary physical space and cooling based on the ambient temperature and the heat loss in the panel

