

## CHAPTER 8 STANDARD SPECIFICATIONS

Max. Applicable Motor Output Range		1-Phase, 100 ~ 120VAC, 50/60Hz: 0.2 ~ 0.75kW (0.25 ~ 1Hp)
		1-Phase, 200 ~ 240VAC, 50/60Hz: 0.4 ~ 2.2kW (0.5 ~ 3Hp)
		3-Phase, 200 ~ 230VAC, 50/60Hz: 0.4 ~ 3.7kW (0.5 ~ 5Hp)
		3-Phase, 380 ~ 460VAC, 50/60Hz: 0.4 ~ 3.7kW (0.5 ~ 5Hp)
Output	Output Frequency	0.1 - 600Hz
	Overload Endurance	150% of rated current for 1 minute/10 minutes, Ta <=40; 200% of rated current for 2 seconds
Control Characteristics	Maximum Output Voltage	Proportional to Input Voltage, 3-Phase (For 100V class, output voltage is twice of the input voltage)
	Power factor/Efficiency	Power factor no lower than 0.95. Efficiency no lower than 95% at full load
	Control System	SPWM (Sinusoidal Pulse Width Modulation), V/F control and Sensorless Vector Control
	Speed Control	V/F Control 1:20; Sensorless Control 1:50
	Output Frequency	0.1 - 600Hz, Programable
	Output Frequency Resolution	0.01Hz
	PWM Carrier Frequency	1kHz -18kHz Adjustable (Some models are limited)
	Torque Characteristics	Including the auto-torque, auto-slip compensation; starting torque can be 150% at 1.0Hz
	Skip Frequency	Setting range 0.1-600Hz, Max. 3 points
	Accel/Decel Time	0.1-6000 seconds (2 Independent settings for Accel/Decel Time)
	Stall Prevention Level	10 to 250%, Setting of Rated Current. Setting range 0.1-600Hz while stop.
	DC Braking	DC Braking Current Level: 0 to 125% of rated output current. DC Braking time: 0 to 60 seconds. Start-Point for DC Braking: 0.1-600Hz both when start up and stop.
	Dynamic Braking Torque	Approx. 20%. Dynamic Brake chopper built-in.
	V/F Pattern	Adjustable V/F curve using 4 independent points.
Operating Characteristics	Frequency Setting	Keypad: By a rotary encoder (setting resolution 0.01Hz/step)
		External Signal: 0 ~ +10VDC (Input impedance 20kΩ), 4 ~20mA DC (Input impedance 250Ω), Multi-Function Inputs 1 ~ 6 (15 Steps Jog, up/down), PLC run, (Option) RS-485 Interface MODBUS protocol.
	Operation Setting	Keypad: Set by RUN and STOP
		External Signal: FWD, REV, MI1 to MI6 can be combined to offer various modes of operation, (Option) RS-485 serial interface MODBUS protocol
	Multi-Function Input Signal (6 signals)	Multi-step selection 0 to 15, first to second accel/decel switches, accel/decel inhibit, EF Input, Emergency Stop, auxiliary motor control is invalid, ACI/AVI/AUI speed command selection, Reset, PLC Run, Up/Down command, Sink/Source selection
	Multi-Function Output Indication, (2 signals, extra 3 signals as option)	Drive Operating, Frequency Attained, Non-zero, Base Block, Fault Indication, Local/Remote indication, PLC Operation indication, and Auxiliary Motor Output
	Analog Output Signal (Option)	Analog signal output proportional to output frequency, output current, voltage, frequency command or motor's speed.
	Fault Indication	The output will be activated when faults occur (1 Relay contact point RA, RB, RC. or 2 Open-collector output)
Communication		(Option) RS-485 serial interface MODBUS protocol
Other Functions		PID feedback control, automatic voltage regulation, Momentary Power Loss restart, S-Curve, External Fault, Fault Reset, Auto Restart, Fault Records, Frequency Limits, Fan & Pump Control, Parameter Lock/Reset, Auto Tuning, Reverse Inhibition, Over-Voltage/ Over-Current Stall Prevention, automatic energy-saving, DC Braking, Speed Search during Start-up, PLC, MODBUS Communication,
Protection		Self-testing, AC source Over Voltage, Over Voltage, Over Current, Under Voltage, Over Load, Overheating, External Fault, Electronic thermal, Ground Fault, Stall Prevention, Output short circuit, IGBT short circuit
Digital Keypad ( 6 digits, non-detachable )	6 Function keys	Access Run, Stop, Reset/ Digit Shift, Display mode, Keypad Enable, Programming data operation.
	360 degree Rotary Encoder	Sets the parameter number and changes the numerical data
	6 digits 7 segment display	Display the Setting frequency/actual operation frequency, Output current/Voltage, User defined unit.
	Six LED Display for status indication	Display the AC drive's run/stop status, forward/Reverse run status, Keypad enable, and Frequency command source.
Environment	CE Safety	Meet LVD: EN50178 standards; When combining with the company's filter, meet EMC: EN61800-3 standards
	UL Safety	Meet UL508C standards
	Temperature	Ambient: -10℃ ~ +50℃ (Non-Condensing and not frozen). Storage: -20℃ ~ +60℃
	Humidity	Below 98%RH (Non-Condensing)
	Vibration	Below 20Hz: 1G, above 20Hz: 0.6G
Installation Location		Altitude 1,000 m or lower, keep away from corrosive gasses, liquid and dust

\*TOPVERT S1 series are designed and manufactured base on CNS, IEC, CE and UL standards.

<b>1-Phase, 100 ~ 120VAC, 50/60 Hz (Tolerance Range: 90 ~ 132V, 47 ~ 63Hz) Output Voltage :200~240VAC</b>											
Model	Applicable Motor (230V 4 P)		Rated Output				Source	Enclosure Construction			
TOPVERT S1-xxxxx	Power (kW)	Horse Power (Hp)	Capacity (kVA)	Current (A)	Voltage (V)	Frequency (Hz)	Current (A)	Cooling Methods	Protection Methods (IP/NEMA)	Gross Weight (kg)	Frame Code
110P2	0.2	0.25	0.6	1.6	3- Phase, 0-240 (Max)	0.1- 600	6.1	Fan- cooled	IP 20 NEMA 1		S1-A
110P4	0.4	0.5	1.2	3			11.4				
110P7	0.75	1	2	5			19.1				

<b>1-Phase, 200 ~ 240VAC, 50/60 Hz (Tolerance Range: 180 ~ 264V, 47 ~ 63Hz)</b>											
Model	Applicable Motor (230V 4 P)		Rated Output				Source	Enclosure Construction			
TOPVERT S1-xxxxx	Power (kW)	Horse Power (Hp)	Capacity (kVA)	Current (A)	Voltage (V)	Frequency (Hz)	Current (A)	Cooling Methods	Protection Methods (IP/NEMA)	Gross Weight (kg)	Frame Code
210P4	0.4	0.5	1.2	3	3- Phase, 0-240 (Max)	0.2- 600	5.7	Fan- cooled	IP 20 NEMA 1		S1-A
210P7	0.75	1	2	5			9.5				
211P5	1.5	2	3	7.5			14.3				
212P2	2.2	3	4.4	11			21				S1-B

<b>3-Phase, 200 ~ 240VAC, 50/60 Hz (Tolerance Range: 180 ~ 264V, 47 ~ 63Hz)</b>											
Model	Applicable Motor (230V 4 P)		Rated Output				Source	Enclosure Construction			
TOPVERT S1-xxxxx	Power (kW)	Horse Power (Hp)	Capacity (kVA)	Current (A)	Voltage (V)	Frequency (Hz)	Current (A)	Cooling Methods	Protection Methods (IP/NEMA)	Gross Weight (kg)	Frame Code
230P4	0.4	0.5	1.2	3	3- Phase, 0-240 (Max)	0.1-600	3.3	Fan- cooled	IP 20 NEMA 1		S1-A
230P7	0.75	1	2	5			5.5				
231P5	1.5	2	3	7.5			8.3				
232P2	2.2	3	4.4	11			12.1				S1-B
233P7	3.7	5	6.8	17			18.7				

<b>3-Phase, 380 ~ 460VAC, 50/60 Hz (Tolerance Range: 342 ~ 528V, 47 ~ 63Hz)</b>											
Model	Applicable Motor (460V 4 P)		Rated Output				Source	Enclosure Construction			
TOPVERT S1-xxxxx	Power (kW)	Horse Power (Hp)	Capacity (kVA)	Current (A)	Voltage (V)	Frequency (Hz)	Current (A)	Cooling Methods	Protection Methods (IP/NEMA)	Gross Weight (kg)	Frame Code
430P4	0.4	0.5	1.3	1.6	3- Phase, 0-460 (Max)	0.1-600	1.8	Fan- cooled	IP 20 NEMA 1		S1-A
430P7	0.75	1	2.4	3			3.3				
431P5	1.5	2	3.3	4.2			4.6				
432P2	2.2	3	4.8	6			6.6				S1-B
433P7	3.7	5	6.8	8.5			9.4				