



SV2-500L2

Three-phase AC200 to 240V for 5kW



*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

Specifications

Model				SV2-500L2	
General specifications	Capacity			5.0 kW	
	Input power supply	Voltage/ frequency	Main circuit	3-phase 200 to 240 VAC +10 to -15%, 50/60 Hz 270 to 324 VDC *1	
			Control circuit	Single-phase 200 to 240 VAC +10 to -15%, 50/60 Hz 270 to 324 VDC *1	
		Allowable frequency fluctuation	Main circuit/ control circuit	No more than ±5%	
		Overvoltage category		III	
	Control mode			Three-phase full-wave rectification, IGBT, PWM control, sine-wave current driving method	
	Feedback			22-bit serial encoder (absolute) communication, fully closed control serial communication, analog feedback	
	Operating environment	Operating atmosphere	Enclosure rating	IP10	
			Pollution degree	Pollution degree: 2 (in an IP54 or higher control panel) However, usage under the following requirements required: • No corrosive gas or flammable gas present • No exposure to water, oil, or chemicals • No dust present	
		Operating ambient temperature		-5 to +60°C 23 to 140°F (no freezing; reduced ratings at +55°C 131°F or more)	
		Storage ambient temperature		-20 to +85°C -4 to +185°F (no freezing)	
		Operating/storage ambient temperature		95% RH or less (no condensation)	
		Altitude		2000 m 6561.7' or less above sea level (usable at reduced ratings at 1000 m 3280.8' or more)	
		Vibration resistance		4.9 m/s² 16.1'/s² (JIS C60068-2-6 compliant)	
		Impact resistance		19.6 m/s² 64.3'/s² (JIS C60068-2-27 compliant)	
		Other		No static electricity noise, strong electric fields, magnetic fields, or radiation present	
		Min. insulation resistance			500 VDC, 1 MΩ or more with insulation resistance tester
		Applied standard	UL/CSA standards		UL61800-5-1, CSA22.2 No.274
			CE marking	Low-voltage directive	EN61800-5-1, EN50178
				EMI	EN55011 Class A, EN61800-3, EN61000-6-4
	EMS			EN61800-3, EN61000-6-2	
	North America EMI standard		FCC Part15 B, ICES-003. Class A		
	Structure	Type		Attached to base mount	
	Safety function			STO function (STO/EN61800-5-2)	

	Safety function	Safety parameters		SIL3/EN61508, SIL CL 3/EN62061, PLe (Category3) / EN ISO13849-1: 2008
		Response time		8 ms (max.)
		Input		STO1, STO2: Base block signal for power module Internal impedance: 4.7 kΩ Operable voltage range: +24 V ±20% Max. delay time: 8 ms (Time from turning STO1, STO2 off until motor current cutoff)
		Output		EDM: Built-in safety circuit status monitoring (fixed output) Max. allowable voltage: 30 VDC Max. allowable current: 50 mA DC Max. voltage drop at ON: 1.5 V Max. delay time: 8 ms (Time from changing STO1, STO2 until EDM change)
		Applied standard		EN61800-5-2, EN ISO13849-1: 2008, EN61508, EN62061, EN60204-1, EN61326-3-1
	Protection function		Overcurrent, overvoltage, undervoltage, overload, regenerative abnormalities, etc.	
	Insulation withstand voltage		1500 VAC or more (between primary side and ground) 3000 VAC or more (between primary side and secondary side) 350 VAC: Between secondary circuit and ground	
	Weight		Approx. 4.4 kg	
	Power supply/ current capacity and power loss	Main circuit power supply		Three-phase 200 V
		Max. applicable motor capacity		5.0 kW
Power supply capacity for 1 amplifier		Three-phase 200 V: 7.5 kVA		
Output current		Continuous	32.9 Arms	
		Max.	84 Arms	
Main circuit power loss		263.7 W		
Regenerative resistor power loss		36 W		
Control circuit power loss		27 W		
Total power loss		326.7 W		
Rated input current		Main circuit	Three-phase 200 V: 25 Arms	
		Control circuit	0.3 Arms	
Rush current		Main circuit	68 A	
		Control circuit	34 A	
Performance specifications		Performance	Speed control range	
	Speed fluctuation rate		At load fluctuation	±0.01% or less with load fluctuations of 0 to 100% (at rated rotation speed)
			At main circuit voltage change	0% with ±10% of rated voltage (at rated rotation speed)
			At ambient temperature change	±0.1% or less with ambient temperatures of 0 to +50°C 32 to 122°F (at rated rotation speed)
	Torque control accuracy (reproducibility)		±1%	
	Speed frequency response frequency		2.6 kHz	
	Dynamic brake		Operated at main circuit power supply OFF, servo alarm, limit switch detection (LSP/LSN), forced stop detection (FSTOP)	
	Regenerative resistor		Built-in regenerative resistor: 50 W to 400 W ... not installed 750 W to 5.0 kW ... installed External regenerative resistor: OP-84399 (50 W to 1.0 kW) OP-87073 (1.5 kW *2)	
	Display Function	Panel function		7-segment LED Rotary switch ×2 (16 ch) Slide switch ×1 (4 ch)
		Status display LED		CHARGE: For notification of main circuit power supply input (orange) POWER: For notification of control circuit power supply input (green)

I/O specifications			CONNECT: For notification of connection (green) LINK1, LINK2: For notification of MECHATROLINK communication (green)
	Auxiliary function		Gain control, alarm history, Z-phase search, etc.
	Sequence input signal	Number of inputs	7 (3 high-speed input, 4 general input)
		Max. input voltage	28.8 VDC
		Rated input voltage	24 VDC
		Min. ON voltage	19 VDC
		Min. OFF current/voltage	High-speed input: 0.6 mA, general input: 0.3 mA
		Common point mode	7 points/1 common point (1 terminal) (bidirectional)
		Input time constant	250 μ s, 500 μ s, 1 ms, 2.5 ms, 5 ms, 10 ms
		Input current	High-speed input: 4.5 mA, general input: 3.7 mA
		Input impedance	Approx. 4.7 k Ω
		Assignable input signals	Full signal assignment, logic-settable forced stop (FSTOP), external latch signals 1 to 3 (EXT1, EXT2, EXT3), origin return deceleration switch (DEC), forward limit switch (LSP), reverse limit switch (LSN), forward torque limit selection (PTL), reverse torque limit selection (NTL)
	Sequence output signal	Number of outputs	4
		Output mode	Transistor NPN output
		Rated load	30 VDC / 50 mA
		Leakage current when OFF	0.1 mA
		Residual voltage when ON	1.5 VDC or less
		Common point mode	Independent common
		Assignable output signals	Individual signal assignment excluding ALARM signal, logic-settable alarm (ALARM), in position (INPOS), speed matching (VCMP), zero speed detection (ZSP), operation preparation complete (RDY), torque limiting (TLM), speed limiting (VLM), electromagnetic brake timing (BRAKE), warning (WARN), Positioning proximity (NEAR)
	Analog Feedback Input signal monitor	Max. input voltage	± 12 V
		Accuracy	$\pm 1\%$ of F.S.
		Resolution	± 10 bits
		Input impedance	30 k Ω
	Encoder division pulse output signal	Output mode	Phase A (A+/A-), phase B (B+/B-), phase Z (Z+/Z-): Differential line-driver output
		Line driver	SN75ALS174 (T.I.) or equivalent
		Output frequency	1.6 Mbps (with 2-phase, 4 times multiplication, 6.4 MHz or equivalent) *3
	Analog monitor output	No. of channels	2 ch
		Output range	± 10 V (linearity valid range ± 8 V)
		Resolution	16 bits
		Conversion precision	± 20 mV (typ.)
		Max. allowable load current	± 10 mA
		Conversion speed	1.2 ms (typ.)
Communication specifications	MECHATROLINK-III communication	Communication protocol	MECHATROLINK-III
		Station address	03H to EFH (Max. number of connectable slaves: 62)
		Transmission speed	100 Mbps
		Transmission frequency	125 μ s, 250 μ s, 500 μ s, 750 μ s, 1 to 4 ms (in multiples of 0.5 ms)
		Communication cycle	Support for values starting at transmission frequency $\times 1$
		Number of transmitted bytes	32 bytes/station, 48 bytes/station (selectable with slide switch)
		Transmission media/cable	Category 5e-compliant, STP cross cable
		Operating specifications	Position control / speed control / torque control
		Command input	MECHATROLINK-III command

	USB communication		(sequence, motion, monitor, adjustment, etc.)
		Max. transmission distance	50 m 164.0' *4
		Connected device	PC
		Communication standard	USB 2.0-compliant
		Function	Status display, parameter setting, tuning, etc.

*1 When using a DC power supply input, set “AC/DC power supply” to “DC”.

*2 Use of 2 kW, 3 kW, and 5 kW servo amplifiers is possible depending on the operating conditions.

*3 The division ratio can be set arbitrarily with a parameter.

*4 For instances with 30 m 98.4' or more, use ferrite cores (OP-84409) with 2 turn-winding.

Dimensions

* Download CAD file or product manual for larger image/text and more detail.

sv2-500l2_dimension_01.gif

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