



SE5 Series

High-Performance Vector Inverter

Smart Control for the Future,
Sustainable Drive for Motion

Factory Automation overseas sales division

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Distributor

B260824E.SE5-BO



Model Definition

SE5 - 043 - 0.4K □ - □ □ - xyz

① ② ③ ④ ⑤ ⑥ ⑦

①Product Category	②Voltage Class	③Rated Power	④UL Certification	⑤STO	⑥Filter	⑦Model Description
SE5 Series	-021:220V Single-Phase -023:220V Three-Phase -043:440V Three-Phase	0.4kW...	None: No UL Certification U: With UL Certification	None:No STO T:With STO	None:No Filter L:With Filter	None: General-Purpose Model -xyz: Customized Model

Note: The part number coding here is intended to explain the naming rules; not all arbitrary combinations are available. For detailed available models, please contact a Shihlin Electric sales representative.

Applicable Capacity

SE5 Series		kW	0.4kW	0.75kW	1.5kW	2.2kW	3.7kW	5.5kW	7.5kW	11kW	15kW	18.5kW	22kW
		HP	0.5	1	2	3	5	7.5	10	15	20	25	30
SE5	021	1-Phase 220V											
	023	3-Phase 220V											
	043	3-Phase 440V											

Application Industries



Semiconductor Equipment



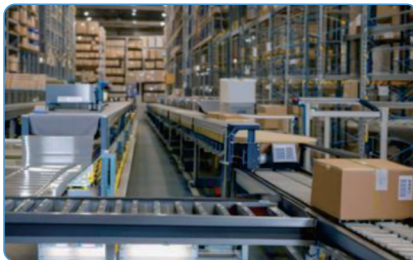
PCB Equipment



CNC Machining Tools



New Energy Equipment



Warehousing & Logistics Lines



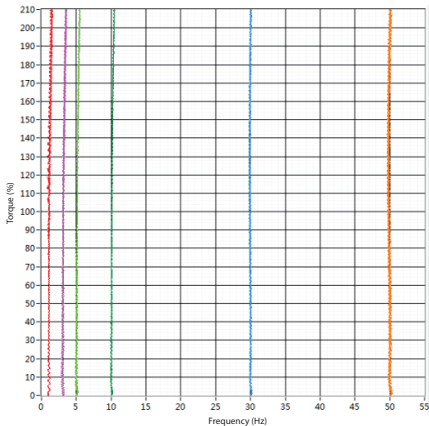
Furniture Production Lines

Product Features

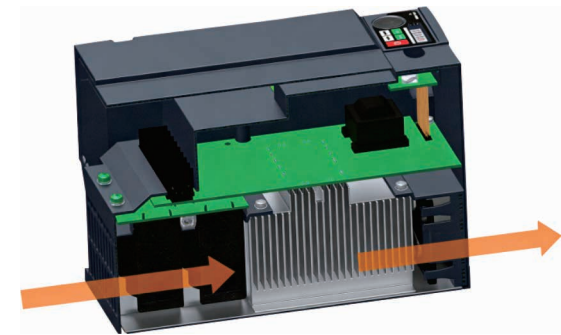
© Supports IM, IPM, SPM, and SynRM motors with simple parameter switching.



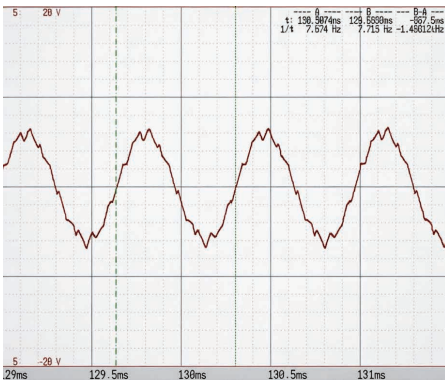
© Starting torque of 200% at 0.5Hz; Overload capacity of 150% for 60 seconds and 200% for 3 seconds.



© Isolated air duct and sealed design separates the cooling system from electronic components, preventing dust from being forced into the internal housing by the fan.



© Supports high-speed operation above 1500Hz; applicable for equipment such as high-speed drilling machines, CNC engraving spindles, and semiconductor dicing machines.



©All models are CE certified, UL certification is optional, and the product complies with RoHS regulations.

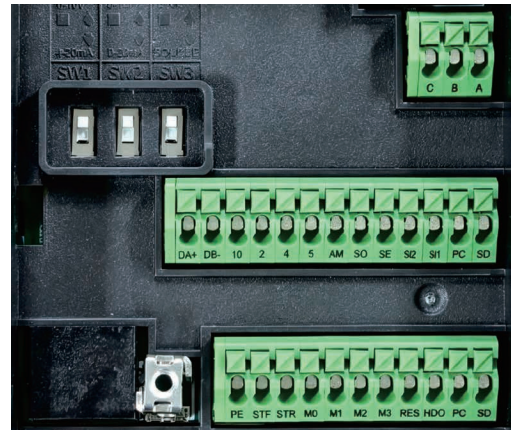


©High safety specifications with built-in STO (Safe Torque Off) function, complying with international SIL3 standards.

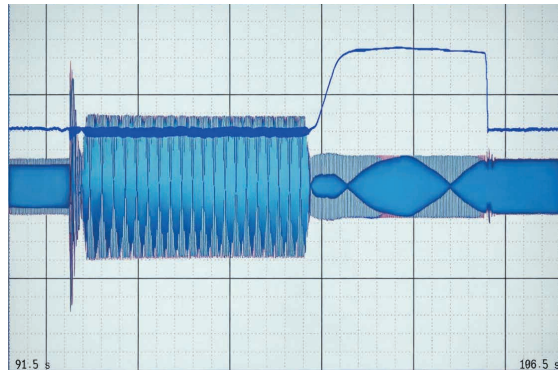


Product Features

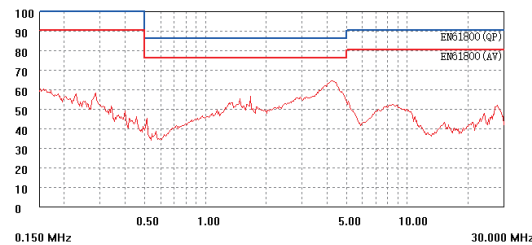
◎ With spring-clamp wiring terminal require no special tools, making wiring quick and easy.



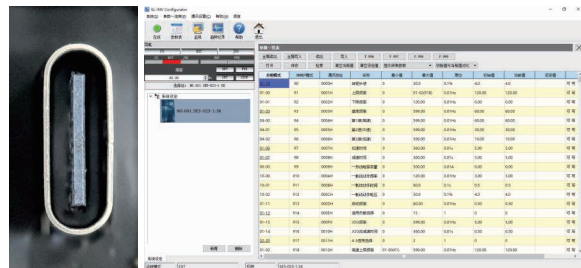
◎ Built-in advanced current stall prevention and regenerative voltage suppression algorithms which enable the inverter for sudden load changes and large inertia deceleration applications.



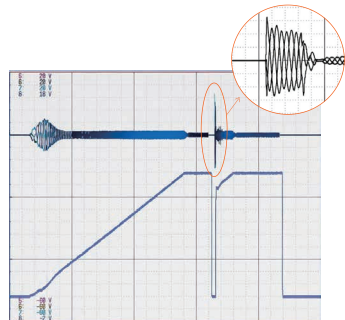
◎ Optional built-in EMC filter complies with up to C3 class requirements, satisfying IEC/EN61800-3 standards to effectively reduce electromagnetic interference.



◎ Built-in USB Type-C interface supports high-speed communication with PC-based debug software.



◎ Built-in USB Type-C interface supports high-speed communication with PC-based debug software.



Electrical Specifications

220V Single-Phase Series

Frame			A		B	
SE5-021-□□□K-□□			0.4	0.75	1.5	2.2
Applicable Motor Capacity HP			0.5	1	2	3
Applicable Motor Capacity kW			0.4	0.75	1.5	2.2
Output	Heavy Duty	Rated Output Capacity kVA	1	1.5	3.2	4.2
		Rated Output Current A	2.7	4.5	8	11
		Overload Capability	150% 60s 200% 3s			
		Carrier Frequency kHz	1~15kHz			
	Light Duty	Rated Output Capacity kVA	1.2	2	3.4	4.8
		Rated Output Current A	3	5	8.5	12.5
		Overload Capability	120% 60s 150% 3s			
		Carrier Frequency kHz	1~15kHz			
	Maximum Output Voltage		3-Phase 200-240V			
	Power Supply	Rated Power Voltage		1-Phase 200-240V 50Hz / 60Hz		
Allowable Power Voltage Range		1-Phase 170-264V 50Hz / 60Hz				
Power Frequency Fluctuation Range		±5%				
Power Capacity kVA		1.5	2.5	4.5	6.9	
Rated Input Current A (Note)		Heavy Duty	5.9	9.7	14.8	23.1
		Light Duty	6.7	10.5	17.9	26.3
Cooling Method			Natural Cooling	Forced Air Cooling		
Inverter Weight kg			1.00	1.06	1.25	1.34

220V Three-Phase Series

Frame			A			B		C		D	
SE5-023-□□□K-□□			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
Applicable Motor Capacity HP			0.5	1	2	3	5	7.5	10	15	20
Applicable Motor Capacity kW			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15
Output	Heavy Duty	Rated Output Capacity kVA	1.2	2	3.2	4.2	6.7	9.5	12.5	18.3	24.7
		Rated Output Current A	3	5	8	11	17.5	25	33	49	65
		Overload Capability	150% 60s 200% 3s								
		Carrier Frequency kHz	1~15kHz								
	Light Duty	Rated Output Capacity kVA	1.3	2.1	3.4	4.8	7.4	10.3	13.7	19.4	26.3
		Rated Output Current A	3.2	5.5	8.5	12.5	19.5	27	36	51	69
		Overload Capability	120% 60s 150% 3s								
		Carrier Frequency kHz	1~15kHz								
	Maximum Output Voltage		3-Phase 200-240V								
Power Supply	Rated Power Voltage		3-Phase 200-240V 50Hz / 60Hz								
	Allowable Power Voltage Range		3-Phase 170-264V 50Hz / 60Hz								
	Power Frequency Fluctuation Range		± 5%								
	Power Capacity kVA		1.5	2.5	4.5	6.4	10	12	17	20	28
	Rated Input Current A (Note)	Heavy Duty	3.5	6.0	9.6	13.2	20.4	30	39.6	58.8	78
		Light Duty	3.8	6.6	10.2	15	23.4	32.4	43.2	61.2	82.8
Cooling Method			Natural Cooling	Forced Air Cooling							
Inverter Weight kg			0.98	1.02	1.06	1.24	1.36	3.57	3.75	4.34	5.27

Note: 1: Value indicates the current at rated output. The rated input current value is not only affected by the power transformer, input-side reactor, and wiring conditions, but also fluctuates with the impedance of the power supply side.

2: Test conditions for rated output current, rated output capacity, and inverter power consumption—the carrier frequency 00-11 (P.72) parameter is set to the factory default value, the inverter output voltage is 220V, the output frequency is 60Hz, and the ambient temperature is 40°C.

3: Inverter weight kg; this weight includes the inverter's external packaging box weight.

Electrical Specifications

440V Three-Phase Series

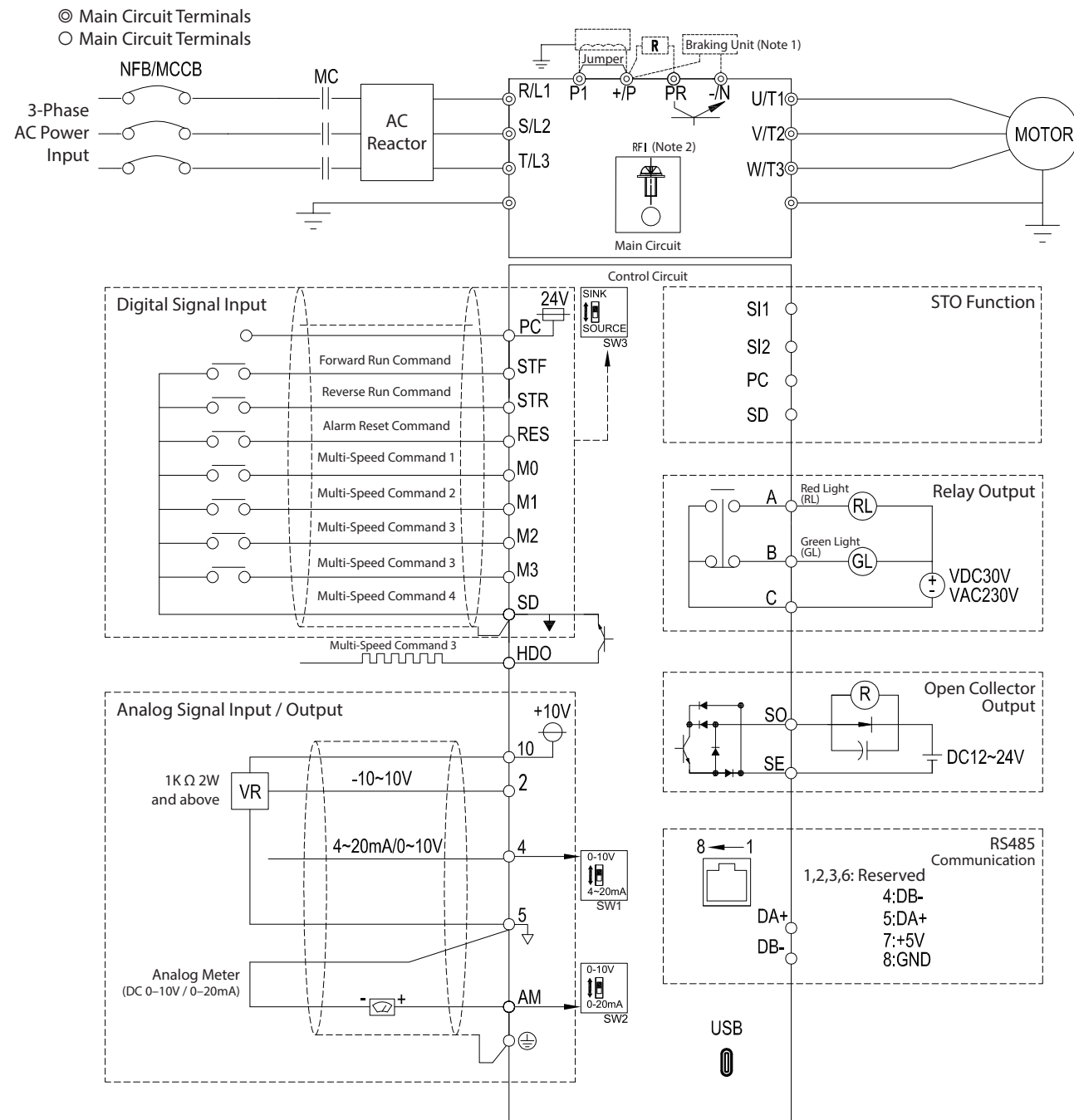
Frame			A			B		C			D		
SE5-043-□□□K-□□			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22
Applicable Motor Capacity HP			0.5	1	2	3	5	7.5	10	15	20	25	30
Applicable Motor Capacity kW			0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22
Output	Heavy Duty	Rated Output Capacity kVA	1	2	3	4.6	6.9	10	14	18	25	29	34
		Rated Output Current A	1.5	2.7	4.2	6	9	12	17	24	32	38	45
		Overload Capability	150% 60s 200% 3s										
		Carrier Frequency kHz	1~15kHz										
	Light Duty	Rated Output Capacity kVA	1.4	2.3	3.5	5	8	12	15.6	21.3	27.4	31.6	37.3
		Rated Output Current A	1.8	3	4.6	6.5	10.5	15.7	20.5	28	36	41.5	49
		Overload Capability	120% 60s 150% 3s										
		Carrier Frequency kHz	1~15kHz										
	Maximum Output Voltage		3-Phase 380-480V										
	Power Supply	Rated Power Voltage		3-Phase 380-480V 50Hz / 60Hz									
Allowable Power Voltage Range		3-Phase 323-528V 50Hz / 60Hz											
Power Frequency Fluctuation Range		±5%											
Power Capacity kVA		1.5	2.5	4.5	6.9	10.4	11.5	16	20	27	32	41	
Rated Input Current A (Note)		Heavy Duty	2.1	3.7	5.8	6.5	9.9	14.3	18.7	27.5	35.2	41.8	48.5
		Light Duty	2.5	4.2	6.4	7.2	11.6	17.3	22.6	30.8	39.6	47.7	53.9
Cooling Method			Natural Cooling	Forced Air Cooling									
Inverter Weight kg			1.01	1.03	1.06	1.20	1.36	3.57	3.63	3.79	4.17	5.25	5.42

Note: 1: Value indicates the current at rated output. The rated input current value is not only affected by the power transformer, input-side reactor, and wiring conditions, but also fluctuates with the impedance of the power supply side.
2: Test conditions for rated output current, rated output capacity, and inverter power consumption—the carrier frequency 00-11 (P.72) parameter is set to the factory default value, the inverter output voltage is 440V, the output frequency is 60Hz, and the ambient temperature is 40°C.
3: Inverter weight (kg); this weight includes the inverter's external packaging box weight.

General Specifications

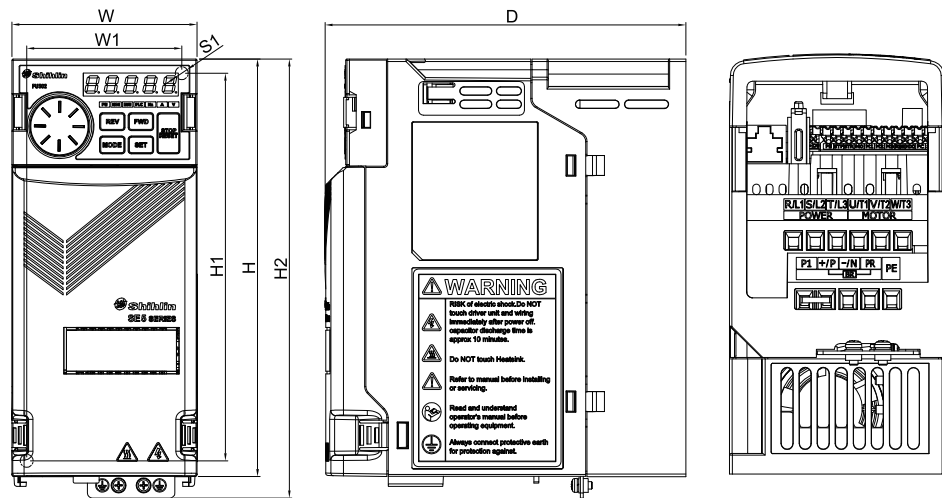
Control Mode		SVPWM, V/F control, V/F closed-loop control (VF+PG), general-purpose magnetic vector control, sensorless vector control (SVC), closed-loop vector control (FOC+PG), sensorless torque control (SVC+TQC), closed-loop torque control (TQC+PG).
Output Frequency Range		0.00~599.00Hz
Frequency Setting Resolution	Digital Setting	Resolution of 0.01Hz.
	Analog Setting	0.01Hz/60Hz (Terminal 2: -10~+10V/13bit) 0.15 Hz/60Hz (Terminal 2: 0~±10V/12bit) 0.03 Hz/60Hz (Terminal 2: 0~5V/11bit) 0.06 Hz/60Hz (Terminal 4: 0~10V, 4~20mA/12bit) 0.12 Hz/60Hz (Terminal 4: 0~5V/11bit)
Output Frequency Accuracy	Digital Setting	±0.01% of the maximum target frequency.
	Analog Setting	±0.1% of the maximum target frequency.
Speed Control Range		IM: 1:200 for SVC, 1:1000 for FOC+PG; PM: 1:20 for SVC, 1:1000 for FOC+PG.
Starting Torque		200% 0.5Hz
V/F Characteristics		Constant torque curve, variable torque curve, Five-point V/F curve, V/F separation.
Acceleration/Deceleration Characteristics		Linear acceleration/deceleration curve, S-curve acceleration/deceleration curve.
Controllable Motor Types		Induction Motor (IM), Permanent Magnet Motor (SPM, IPM), Synchronous Reluctance Motor (SynRM).
Current Stall Prevention		Stall prevention level can be set from 0 ~ 250%.
Target Frequency Setting		Operation Panel setting, DC 0~5V/10V signal, DC -10~+10V signal, DC 4~20mA signal, multi-speed setting, communication setting, HDI setting.
PID Control		Refer to parameter descriptions.
Built-in Simple PLC		Supports basic command and application command, with PC programming software available.
Operation Panel	Operation Status Monitoring	Output frequency, output current, output voltage, PN voltage, output torque, electronic thermal accumulation rate, temperature rise accumulation rate, output power, analog input signal, external terminal status...; a maximum of 12 sets of alarm codes and detailed alarm information can be recorded.
	LED Indicators (7 LEDs)	Frequency monitoring indicator, voltage monitoring indicator, current monitoring indicator, mode switch indicator, PU control indicator, PLC indicator, run indicator.
Communication Function		Built-in Shihlin/MODBUS communication protocol; optional high-speed communication cards including MODBUS TCP, CANopen, Profibus, DeviceNet, EtherCAT, Profinet, and CC-Link (planning).
Protection Mechanism / Alarm Function		Output short-circuit protection, overcurrent protection, overvoltage protection, undervoltage protection, motor overheat protection, IGBT module overheat protection, input phase-loss protection, output phase-loss protection, motor-to-ground short circuit protection, stall prevention protection, functional safety protection, communication abnormality protection, etc.
Environment	Ambient Temperature	Heavy Duty: -10 ~ +50°C (non-freezing); Light Duty: -10 ~ +40°C (non-freezing).
	Ambient Humidity	Below 95%RH (non-condensing).
	Storage Temperature	-20 ~ +65°C。
	Surrounding Environment	Indoor, free from corrosive gases, flammable gases, and flammable dust.
	Altitude	Below 2000m; when the altitude is above 1000m, derate by 2% for every additional 100m.
	Vibration	Below 5.9m/s ² (0.6G).
	Enclosure Rating	IP20
	Environmental Pollution Degree	2
International Certifications		Class I
		Standard CE certification; optional UL and STO certifications.

Wiring Diagram



- Note: 1: The entire series equip with a built-in braking unit. When in use, please ensure the braking resistor is connected across the +/P and PR terminals.
 2: The entire series equip with a built-in RFI filter to suppress electromagnetic interference. However, to comply with CE regulations, please refer to the relevant instructions in the manual during installation.
 3: When connecting an external braking unit across (+/-P)-(-/N), please refer to Section 3.7.1 of the manual for details.
 4: When connecting an external DC reactor, the jumper between +/P and P1 must be removed. Please refer to Section 3.6.4 of the manual for reactor selection.

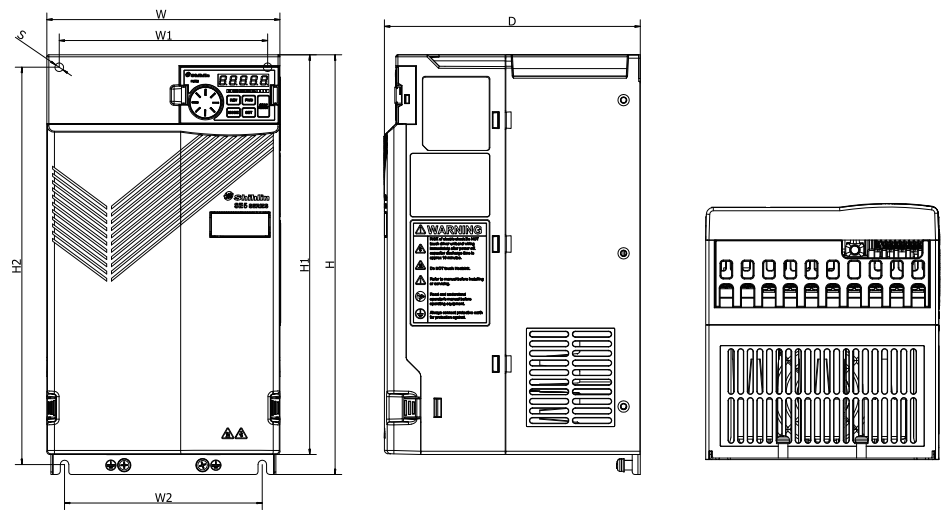
Outline Dimensional Drawings



Unit : mm

Frame	Model	W	W1	H	H1	H2	D	S1
A	SE5-043-0.4~1.5K	74.0	62.0	167.0	155.0	175.5	144.0	5.2
	SE5-023-0.4~1.5K							
	SE5-021-0.4~0.75K							
B	SE5-043-2.2~3.7K	105.0	93.0	178.0	166.0	—	146.0	5.2
	SE5-023-2.2~3.7K							
	SE5-021-1.5~2.2K							

Note: When Frame A models are equipped with an optional built-in filter, please refer to the manual for specific installation dimensions.



Unit : mm

Frame	Model	W	W1	W2	H	H1	H2	D	S1
C	SE5-043-5.5~11K	141	124.6	116.6	285	270	269.3	185	6.5
	SE5-023-5.5~7.5K								
D	SE5-043-15~22K	175	156.4	148.4	315	300	298.2	192	6.5
	SE5-023-11~15K								

Accessory Selection

Regenerative Braking Resistor

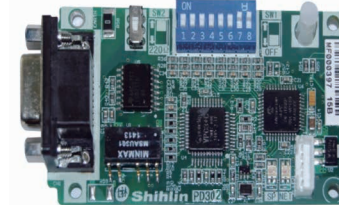
Voltage	Applicable Motor (kW)	Braking Resistor (10% ED, 125% Braking Torque)	Maximum Braking Torque Limitation		
		Equivalent Braking Resistor Specifications	Minimum Resistance Value (Ω)	Maximum Total Braking Current (A)	Maximum Peak Power (kW)
021	0.4	40W 375 Ω	220	2	0.6
	0.75	75W 200 Ω	120	3	1.1
	1.5	150W 100 Ω	60	6	2.2
	2.2	220W 68.2 Ω	60	6	2.2
023	0.4	40W 375 Ω	220	2	0.6
	0.75	75W 200 Ω	120	3	1.1
	1.5	150W 100 Ω	60	6	2.2
	2.2	220W 68.2 Ω	60	6	2.2
	3.7	370W 40.5 Ω	40	9	3.2
	5.5	550W 27.3 Ω	30	12	4.3
	7.5	750W 20 Ω	20	18	6.5
	11	1100W 13.6 Ω	13.6	26	9.5
043	15	1500W 10 Ω	10	36	13.0
	0.4	40W 1500 Ω	1000	1	0.5
	0.75	75W 800 Ω	800	1	0.7
	1.5	150W 400 Ω	320	2	1.6
	2.2	220W 272.8 Ω	160	5	3.2
	3.7	370W 162.2 Ω	120	6	4.3
	5.5	550W 109.1 Ω	75	10	6.9
	7.5	750W 80 Ω	75	10	6.9
	11	1100W 54.6 Ω	50	14	10.4
	15	1500W 40 Ω	40	18	13.0
	18.5	1850W 32.4 Ω	32	23	16.2
	22	2200W 27.3 Ω	27.2	26	19.1

Note: 1: Regarding the regenerative braking resistor capacity: For models equipped with a built-in braking unit, the selected braking resistor is based on a standard 10% ED regenerative duty cycle (where the resistor operates for 5 seconds and must stop for 45 seconds to dissipate heat). For models without a built-in braking unit, the selection is based on the regenerative duty cycle of the externally configured braking unit. The actual wattage rating of the resistor can be adjusted downward depending on the user's specific operational context (such as the heat load). However, the overall resistance value must be greater than or equal to the ohmic value specified in the table above; (otherwise, it may result in inverter malfunction or damage.)

2: In application scenarios involving high-frequency starting and stopping operations, a higher regenerative duty cycle must be programmed. Consequently, the capacity of the regenerative braking resistor needs to be proportionally increased. If you have any technical questions, please feel free to contact us for further detail.

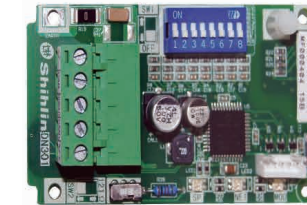
Expansion Cards

PD302



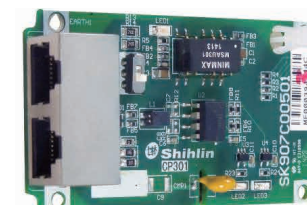
Profibus Communication Expansion Card

DN301



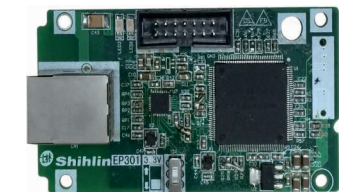
DeviceNet Communication Expansion Card

CP301



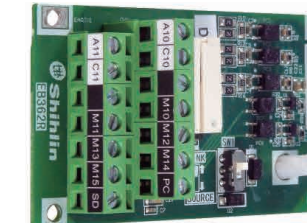
CANopen Communication Expansion Card

EP301



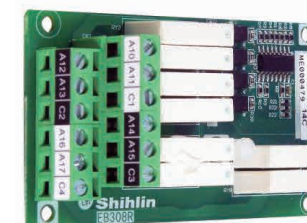
Ethernet Communication Expansion Card

EB362R



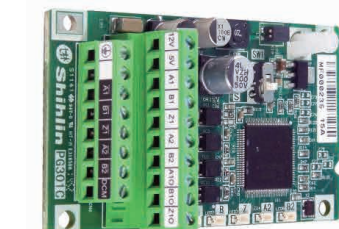
I/O Expansion Card

EB308R



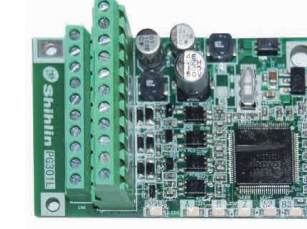
I/O Expansion Card

PG301C



Speed Feedback Card
(Supports Open Collector Output)

PG301L



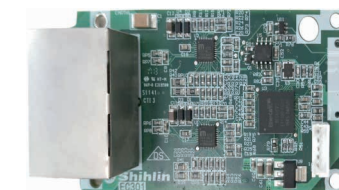
Speed Feedback Card
(Supports Differential Output)

PG302L



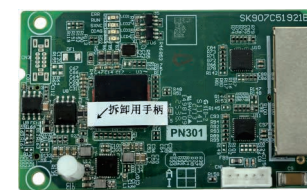
Speed Feedback Card
(Supports Resolver Signals)

EC301-E5



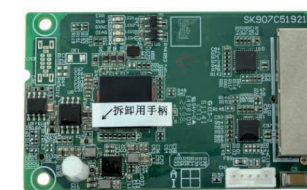
EtherCAT Communication Expansion Card

PN301



Profinet Communication Expansion Card

CL 301 (Planning)



CC-Link IE Field Basic Communication Expansion Card (Planning)