



# SHIHLIN INVERTER

## SL3 Series



AUTOMATION FOR SMART MANUFACTURING  
SHIHLIN ELECTRIC & ENGINEERING

## Product Range

Model		kW (HP)	0.4 (0.5)	0.75 (1)	1.5 (2)	2.2 (3)
SL3	021	1Ø 220V				
	043	3Ø 440V				

## Product Feature

### Save space, easier installation

Mini design, the size is smaller than all previous models.

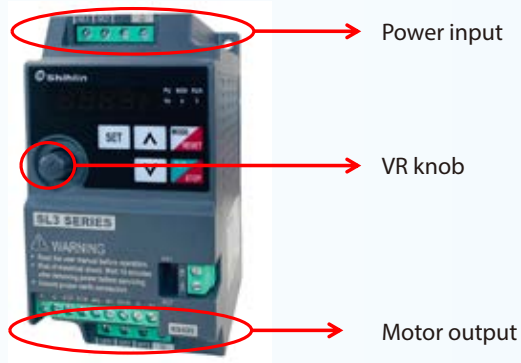
Choose between din rail installation and screw installation, save installation space effectively.



### Intuitive Layout And Simple Operation

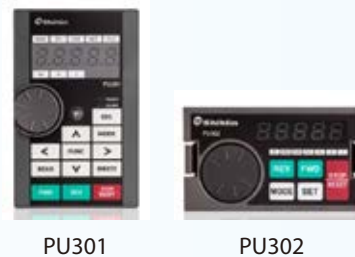
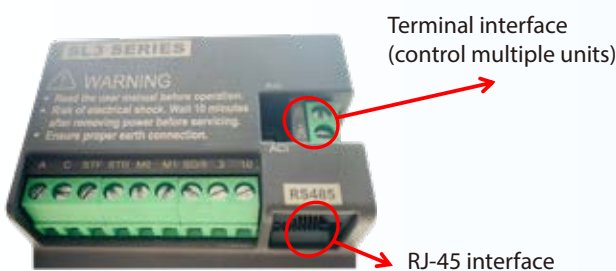
Power input on top and motor output at bottom, reduce the chance of wrong wiring.

Built-in keypad with VR knob, easy to adjust frequency.



### Dual Communication Interface

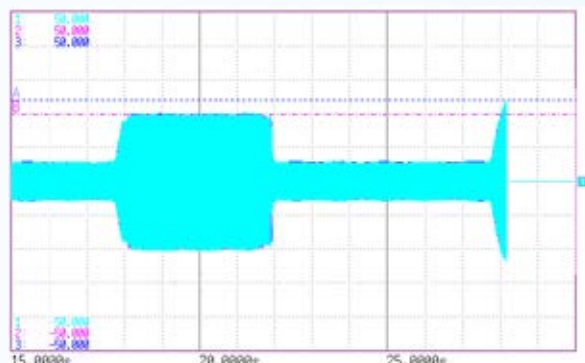
With two types of RS485 interface, users can easily control multiple units through communication.



Supports exterior keypad: DU06, DU08S, PU301, PU302  
\*Note:RS485 and keypad will not work simultaneously.

### More than enough overload protection

Over current protection level (OC) 260%; Over current limit level (LT) 220%, provides stronger driving ability and longer lifetime.

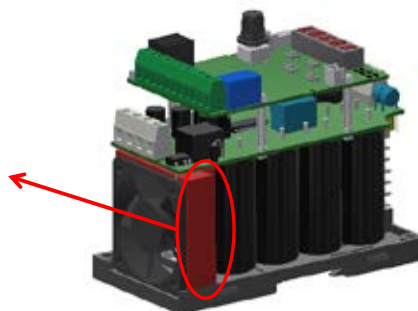


## Environmental Resistance Improve

### Optimized air channel

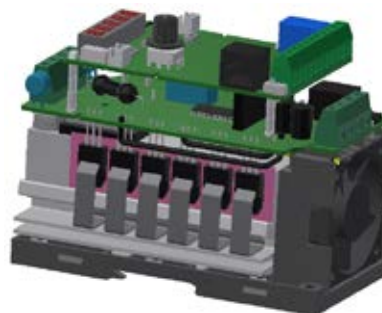
Reduce the dust that goes inside, increase the lifetime of SL3 inverter.

Added structure to improve air channel.



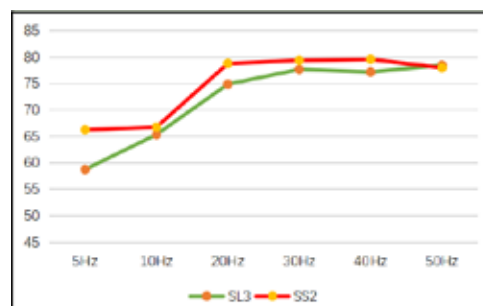
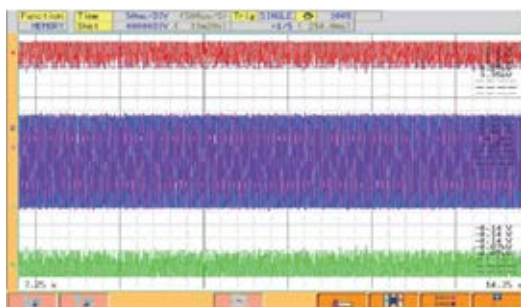
### Improved isolation design

Add isolation (thermal conductive) silicon film in Frame A to increase creepage distance.



### Lower motor noise

Low noise carrier frequency control(Soft-PWM) can turn motor's metallic noise into a more pleasing buzz. SL3 is embedded with improved algorithm to further lower motor noise.



Noise comparison (db)

Compared with previous products, the noise is substantially lower at low speed.

### Lower false alarm chance

With better current stall prevention function, the current can be regulated much faster which lowers the chance of triggering alarm.

### Other specialized feature

- Built-in Modbus communication, Baud rate up to 38400bps.
- Built-in PID controller for constant pressure and constant temperature applications.
- Alarm record: 12 sets of records with 2 detailed record, check the operating status with full detail.
- Regeneration avoid function: monitor DC bus voltage in real-time and suppress DC bus voltage when it increase abnormally, prevents over voltage alarm.
- Automatic carrier frequency adjustment, prevent IGBT overheat(NTC) alarm.
- Built-in RFI filter for all range, suppress electric interference effectively.
- Free communication software SL-INVConfigurator, for testing, monitoring, upload and save parameters and much more.

## Electric Specification

### 220V series single phase

Frame		A			B
Model SL3-021-□□□K-□□		0.4	0.75	1.5	2.2
Inverter Output	Rated output capacity (kVA)	1	1.5	2.5	4.2
	Rated output current (A)	2.7	4.5	8	11
	Applicable motor capacity (HP)	0.5	1	2	3
	Applicable motor capacity (kW)	0.4	0.75	1.5	2.2
	Overload current rating	150% 60 seconds, 200% 1 seconds (inverse-time characteristics)			
	Carrier frequency (kHz)	1 ~ 15kHz			
	Maximum output voltage	3 phase 200-240V			
Power Supply	Rated input current (A) *Note 1	6.5	9.3	15.7	24
	Rated input AC voltage/ frequency	single phase 200-240V 50Hz/60Hz			
	Permissible AC voltage fluctuation	single phase 170-264V 50Hz/60Hz			
	Permissible frequency fluctuation	±5%			
	Power supply capacity (kVA)	1.5	2.5	3.5	6.4
Cooling method		Fan cooling			
Weight (kg)		0.6	0.6	0.6	0.8

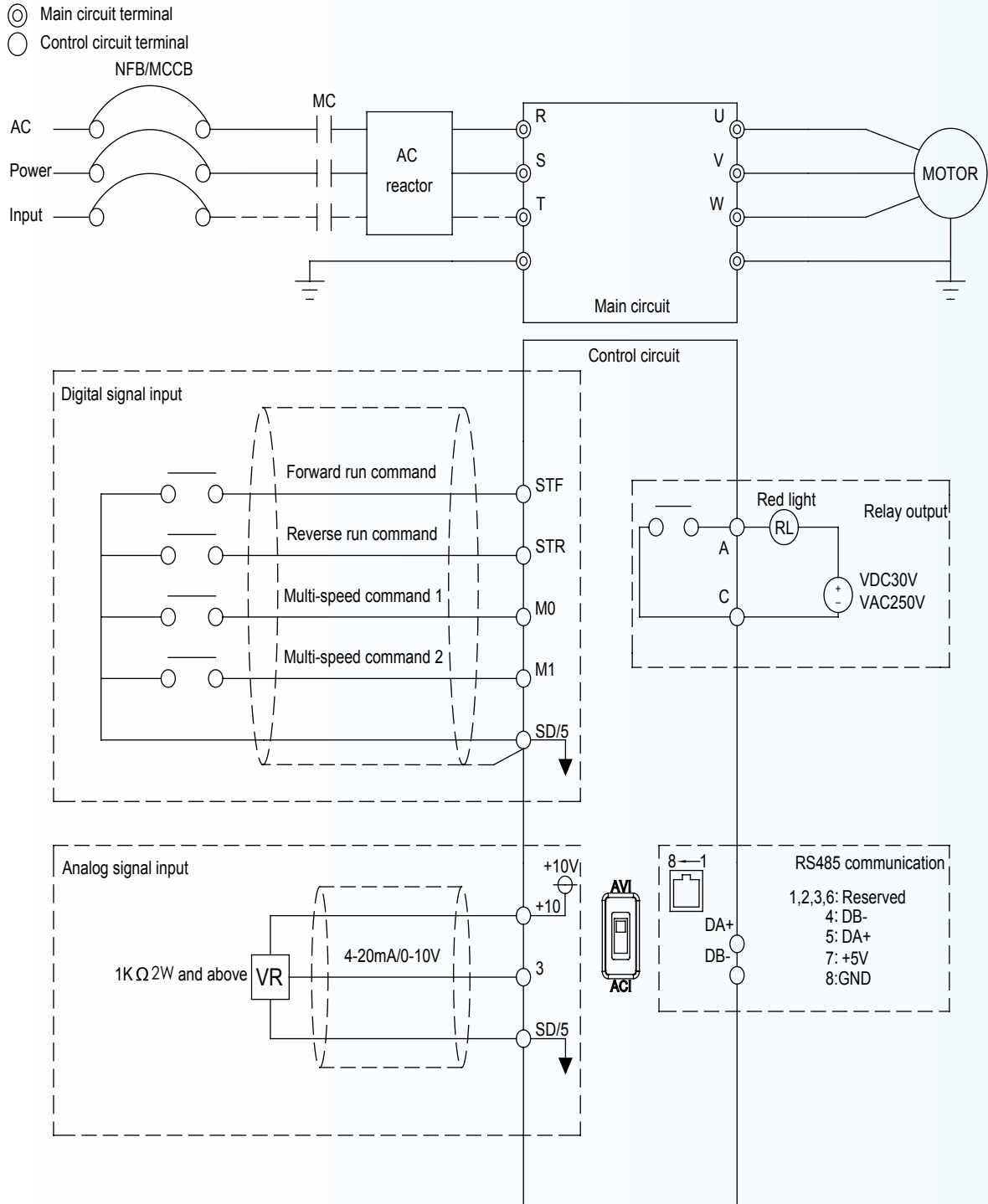
### 440V series three-phase

Frame		B			
Model SL3-043-□□□K-□□		0.4	0.75	1.5	2.2
Inverter Output	Rated output capacity (kVA)	1	2	3	4.6
	Rated output current (A)	1.5	2.6	4.2	6
	Applicable motor capacity (HP)	0.5	1	2	3
	Applicable motor capacity (kW)	0.4	0.75	1.5	2.2
	Overload current rating	150% 60 seconds, 200% 1 seconds (inverse-time characteristics)			
	Carrier frequency (kHz)	1 ~ 15kHz			
	Maximum output voltage	3 phase 380-480V			
Power Supply	Rated input current (A) *Note 1	1.8	3.2	4.3	7.1
	Rated input AC voltage/ frequency	3 phase 380-480V 50Hz/60Hz			
	Permissible AC voltage fluctuation	3 phase 323-528V 50Hz/60Hz			
	Permissible frequency fluctuation	±5%			
	Power supply capacity (kVA)	1.5	2.5	4.5	6.9
Cooling method		Fan cooling			
Weight (kg)		0.8	0.8	0.85	0.85

## General Specification

Control method		V/F control
Output frequency range		0.00~599.00Hz
Frequency setting resolution	Digital setting	0.01Hz
	Analog setting	Maximum output frequency $\pm$ 0.1%.
Output frequency accuracy	Digital setting	Maximum target frequency $\pm$ 0.01%.
	Analog setting	Maximum target frequency $\pm$ 0.1%.
Starting torque		150% / 5Hz automatic torque boost
V/F characteristics		Constant torque curve, variable torque curve, five-point VF curve
Acceleration / deceleration curve characteristics		Linear acceleration /deceleration curve, S shape acceleration /deceleration curve 1 & 2 & 3
Drive motor type		Induction motor (IM)
Stalling protection		The stalling protection level can be set to 0~200%
Target frequency setting		Up down button, VR knob setting, DC 0~5V/10V signal, DC 4~20 mA signal, multi-speed stage level setting, communication setting, PWM pulse setting.
Built-in keypad	Operation monitoring	Output frequency, output current, output voltage, electronic thermal accumulation rate, temperature rising accumulation rate, output power, analog input signal value, digital input and output terminal status...; alarm history 12 sets with operation details of the latest two sets
	LED indicator ( 6 )	Frequency monitoring indicator, voltage monitoring indicator, current monitoring indicator , motor running indicator , mode switch indicator, PU mode indicator
Communication function		RS-485 communication, choose between Shihlin/Modbus communication protocol
Protection mechanism / alarm function		Output short circuit protection, over-current protection, over-voltage protection, under-voltage protection, motor over-heat protection, IGBT module over-heat protection, communication error protection, PID error protection, memory error protection, CPU error protection, stall prevention, module over-heat protection, input power fail protection, terminal 3-5 disconnect protection, over torque protection, Current leakage to ground protection, hardware detect circuit error protection
Environment	Ambient temperature	-10 ~ +40°C (non-freezing)
	Ambient humidity	Below 90%Rh (non-condensing)
	Storage temperature	-20 ~ +65°C
	Surrounding environment	Indoor, no corrosive gas, no flammable gas, no flammable powder.
	Altitude	Altitude below 2000 meters, when altitude is above 1,000 m, derate the rated current 2% per 100m
	Vibration	Vibration below 5.9m/s <sup>2</sup> (0.6G)
	Grade of protection	IP20
	Over voltage level	II
	Degree of environmental pollution	2
Class of protection		Class I
International certification		CE

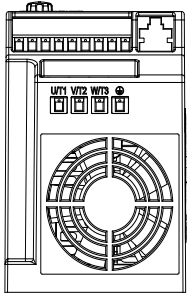
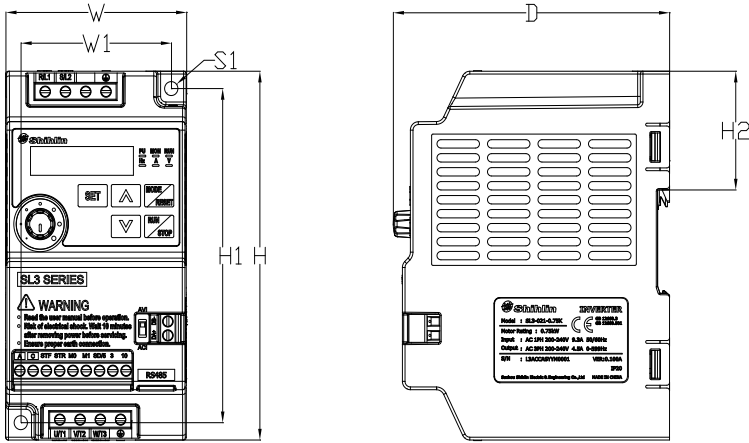
## Terminal wire arrangement



- Note :
- 1.All series include built-in RFI filters, in order to comply with CE regulations; Please refer to manual.
  - 2.When exterior keypad is connect to RJ45 port, RS485 by DA+/DB- will not work;
  - 3.When switching terminal 3-5 voltage/ current input, please check the ACI/AVI switch position, and check parameter 02-20 (P.17) setting.

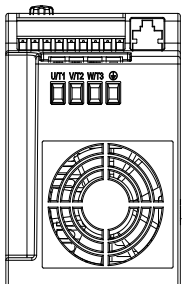
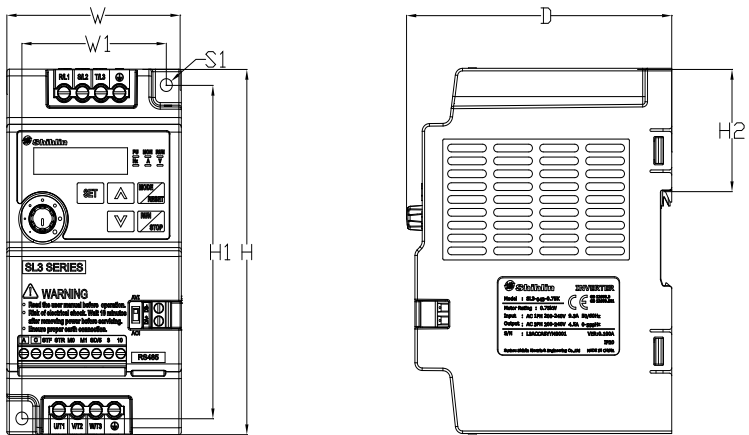
## Appearance and dimensions

### Frame A



Model	W	W1	H	H1	H2	D	S1
SL3-021-0.4K	68	56	132	120	42.5	104	5 (tighten torque 20~25kgf.cm)
SL3-021-0.75K							
SL3-021-1.5K							

### Frame B

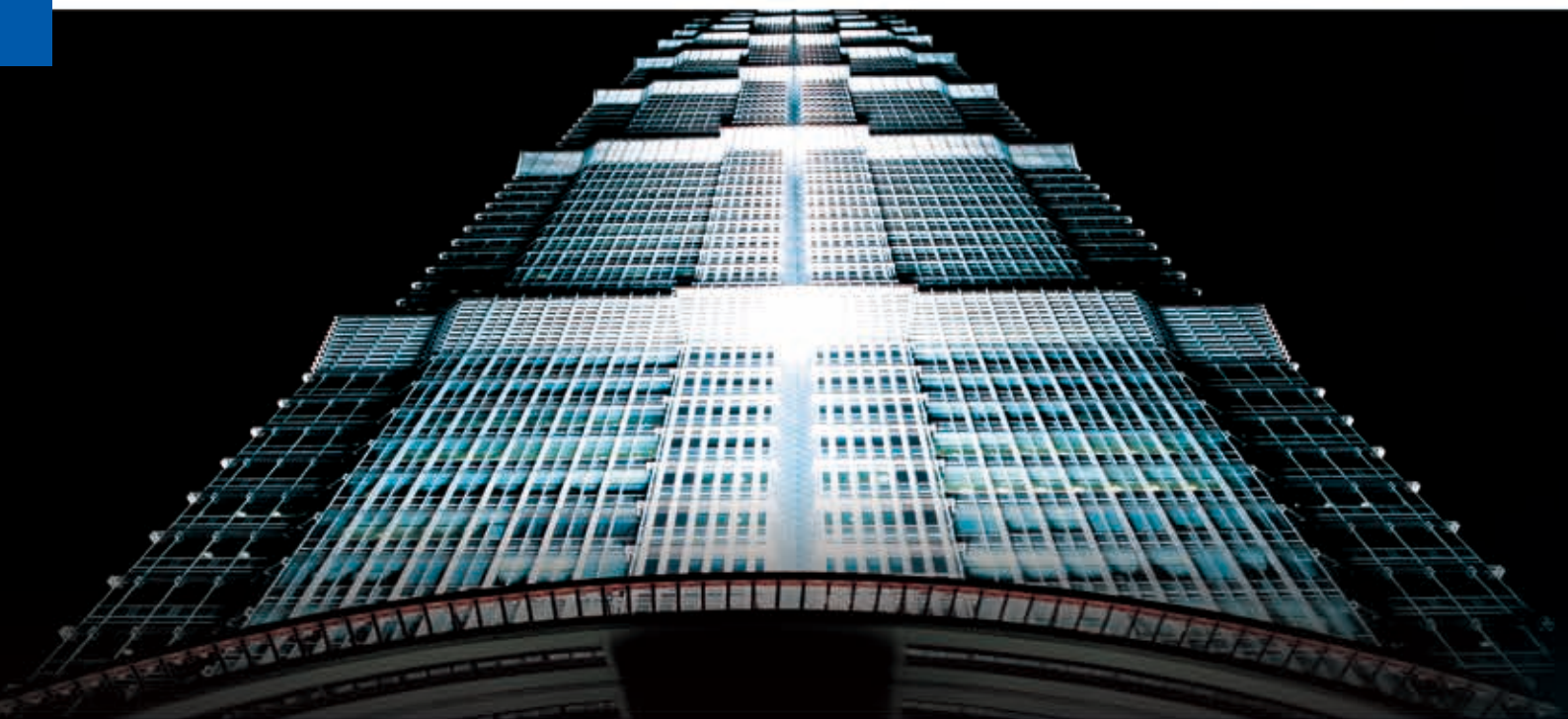


Model	W	W1	H	H1	H2	D	S1
SL3-021-2.2K	72	59.5	142	129.5	42.5	110	5 (tighten torque 20~25kgf.cm)
SL3-043-0.4K							
SL3-043-0.75K							
SL3-043-1.5K							
SL3-043-2.2K							



# SHIHLIN ELECTRIC & ENGINEERING

INVERTER, SERVO MOTOR AND DRIVE, HUMAN MACHINE INTERFACE(HMI), TEMPERATURE CONTROLLER



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