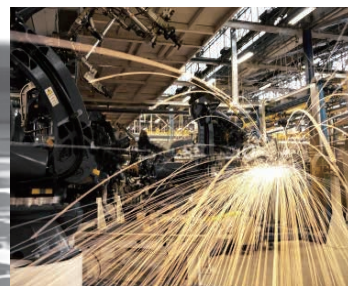


# SF3 series

Communication  
Vector Control Inverter



## Product Range

Model		kW (HP)	3.7 (5)	5.5 (7.5)	7.5 (10)	11 (15)	15 (20)	18.5 (25)	22 (30)	30 (40)	37 (50)	45 (60)	55 (75)	75 (100)	90 (120)	110 (150)	132 (175)	160 (215)	185 (250)	220 (300)	250 (335)	280 (375)	315 (420)	355 (475)
SF3	SF3-043	3 phase 440V	150%60s																					
			200%3s																					
			120%60s																					

## Model Identification

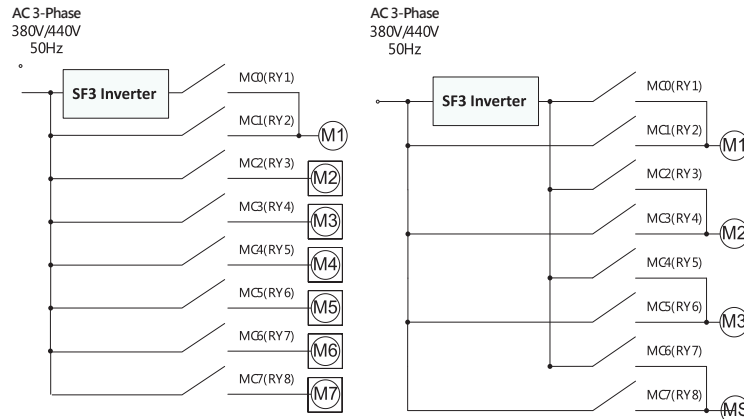
**SF3**      **043** **5.5K/3.7KG**      **XY**

Series	Voltage level	Capacity	Version
SF3 series	043 : three phase 440V	ND:5.5kW HD:3.7kW	None : General model -xy : Customized or specialized or region difference

## Product Features

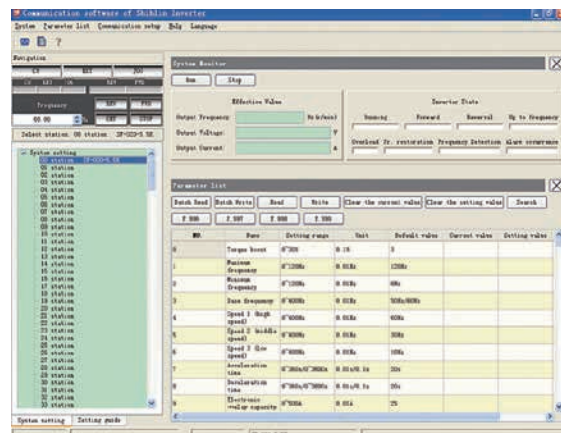
### Multi-Pump Control

- Multi-Pump Control (with EB308R), with multiple relays to support pump control. Controlling maximum of 7 pumps at the same time for 1 inverter.



### PC Communication Software

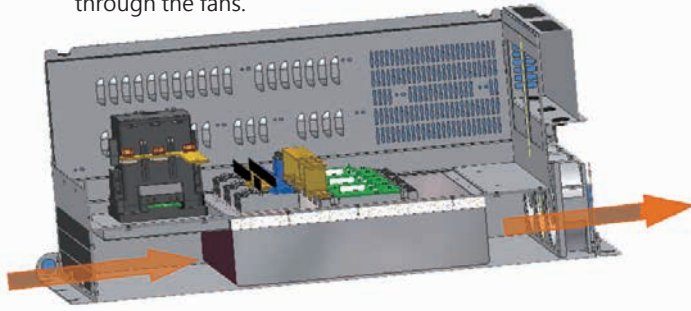
- This provides remote control of multiple inverters for parameters setup, copy and monitoring.



# Product

### 1. Isolated Air Channel

- Ventilation (air flow path) is isolated from the surface of thermal dissipation units and electrical parts. Dust will not be able to infiltrate the interior of the inverter through the fans.



Note: Even though the cooling duct is complete isolated, but if the inverter is installed at the environment where lots of dust or oil gas with out protection, the dust will still pass into inverter.

### 2. Enhanced PCB Coating

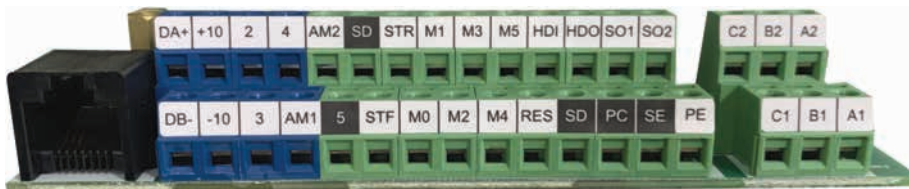
- Protect drive and ensure its operation safety and stability.
- Compliance with international standards IEC 60721-3-3 class 3C2.



- Moisture proof
- Corrosion proof
- Dust proof

### 3. Terminal Block for Quick Wiring

- Standard RJ45 internet connection with DA+, DB- Euroblock, easy connection for multi-machine communication.
- Support maximum 100kHz pulse input(HDI) and output(HDI) signal.



Quick switch for application needs

0-10V	4-20mA	0-10V	0-10V	DEFAULT	SINK
4-20mA	0-10V	0-20mA	0-20mA	↑	↓
SW1	SW2	SW3	SW4	SW5	SOURCE



SF3

# Features



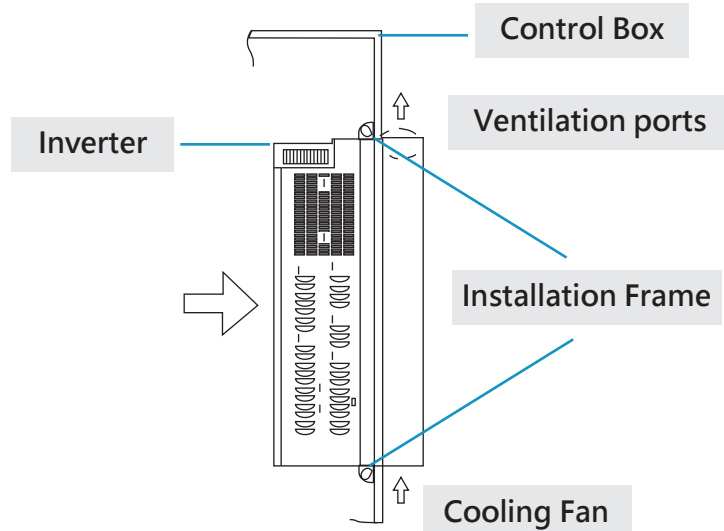
## 4. LCD Operation Interface

- Support 2 display styles.
- Able to simultaneously display 6 sets of operational data.
- Calendar support.
- Offer both English and Chinese language interfaces.
- Capable of storing 3 sets of parameters.
- Support shuttle settings.



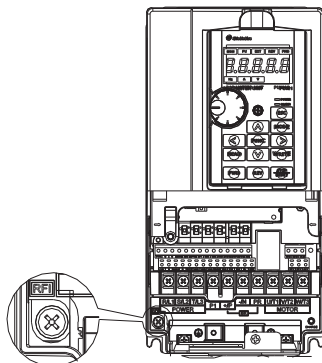
## 5. Through-the-Wall Installation Support Provided for the Entire Series

- Improve heat dissipation, reduce heat generation within the cabinet, and improve protection for the cabinet contents.



## 6. Built-in RFI Filter

- Reduce electromagnetic interference.



### Electrical Specifications

#### 440V three-phase

Frame		A		B			C			D				
Model SF3-043- □ K □ KG		5.5/3.7	7.5 /5.5	11/7.5	15/11	18.5/15	22/18.5	30/22	37/30	45/37	55/45	75/55	90/75	
Output	HD	Rated output capacity (kVA)	10	14	18	25	29	34	46	56	69	84	114	137
		Rated output current (A)	13	18	24	32	38	45	60	73	91	110	150	180
		Applicable motor capacity (HP)	7.5	10	15	20	25	30	40	50	60	75	100	120
		Applicable motor capacity(kW)	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90
		Overload current rating	120% 60 seconds (inverse time characteristics)											
		Carrier frequency (kHz)	1~15kHz						1~10kHz					
	ND	Rated output capacity (kVA)	6.9	10	14	18	25	29	34	46	56	69	84	114
		Rated output current (A)	9	13	18	24	32	38	45	60	73	91	110	150
		Applicable motor capacity (HP)	5	7.5	10	15	20	25	30	40	50	60	75	100
		Applicable motor capacity (kW)	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
		Overload current rating	150% 60 seconds (inverse time characteristics)											
		Carrier frequency (kHz)	1~15kHz											
Maximum output voltage		Three-phase 380-480V												
Power supply	Rated power voltage		Three-phase 380-480V 50Hz/60Hz											
	Allowable fluctuating range of power voltage		Three-phase 342-528V 50Hz/60Hz											
	Allowable fluctuating range of power frequency		±5%											
	Power capacity (kVA)		10.4	11.5	16	20	27	32	41	52	65	79	100	110
Cooling method		Forced air cooling												
Weight(kg)		3	3	6	6	6	10	10	10	11	25	26	30	

Frame		E		F		G			H			
Model SF3-043- □ K □ KG		110 / 90	132 / 110	160 / 132	185 / 160	220 / 185	250 / 220	280 / 250	315 / 280	355 / 315		
Output	HD	Rated output capacity (kVA)	168	198	236	295	367	402	438	491	544	
		Rated output current (A)	220	260	310	340	425	480	530	620	683	
		Applicable motor capacity (HP)	150	175	215	250	300	355	375	420	475	
		Applicable motor capacity(kW)	110	132	160	185	220	250	280	315	355	
		Overload current rating	120% 60 seconds (inverse time characteristics)									
		Carrier frequency (kHz)	1~9kHz									
	ND	Rated output capacity (kVA)	137	168	198	236	295	367	402	438	491	
		Rated output current (A)	180	220	260	310	340	425	480	530	620	
		Applicable motor capacity (HP)	120	150	175	215	250	300	335	375	420	
		Applicable motor capacity (kW)	90	110	132	160	185	220	250	280	315	
		Overload current rating	150% 60 seconds (inverse time characteristics)									
		Carrier frequency (kHz)	1~10kHz									
Maximum output voltage		Three-phase 380-480V										
Power supply	Rated power voltage		Three-phase 380-480V 50Hz/60Hz									
	Allowable fluctuating range of power voltage		Three-phase 342-528V 50Hz/60Hz									
	Allowable fluctuating range of power frequency		±5%									
	Power capacity (kVA)		137	165	198	247	295	367	402	438	491	
Cooling method		Forced air cooling										
Weight(kg)		38	39	56	56	93	93	93	120	120		

**Note:**

The test conditions of rated output current, rated output capacity and inverter power consumption are: carrier frequency (P.72) is default setting; inverter output voltage is at 440V; output frequency is at 60Hz, and surrounding temperature is 40°C.

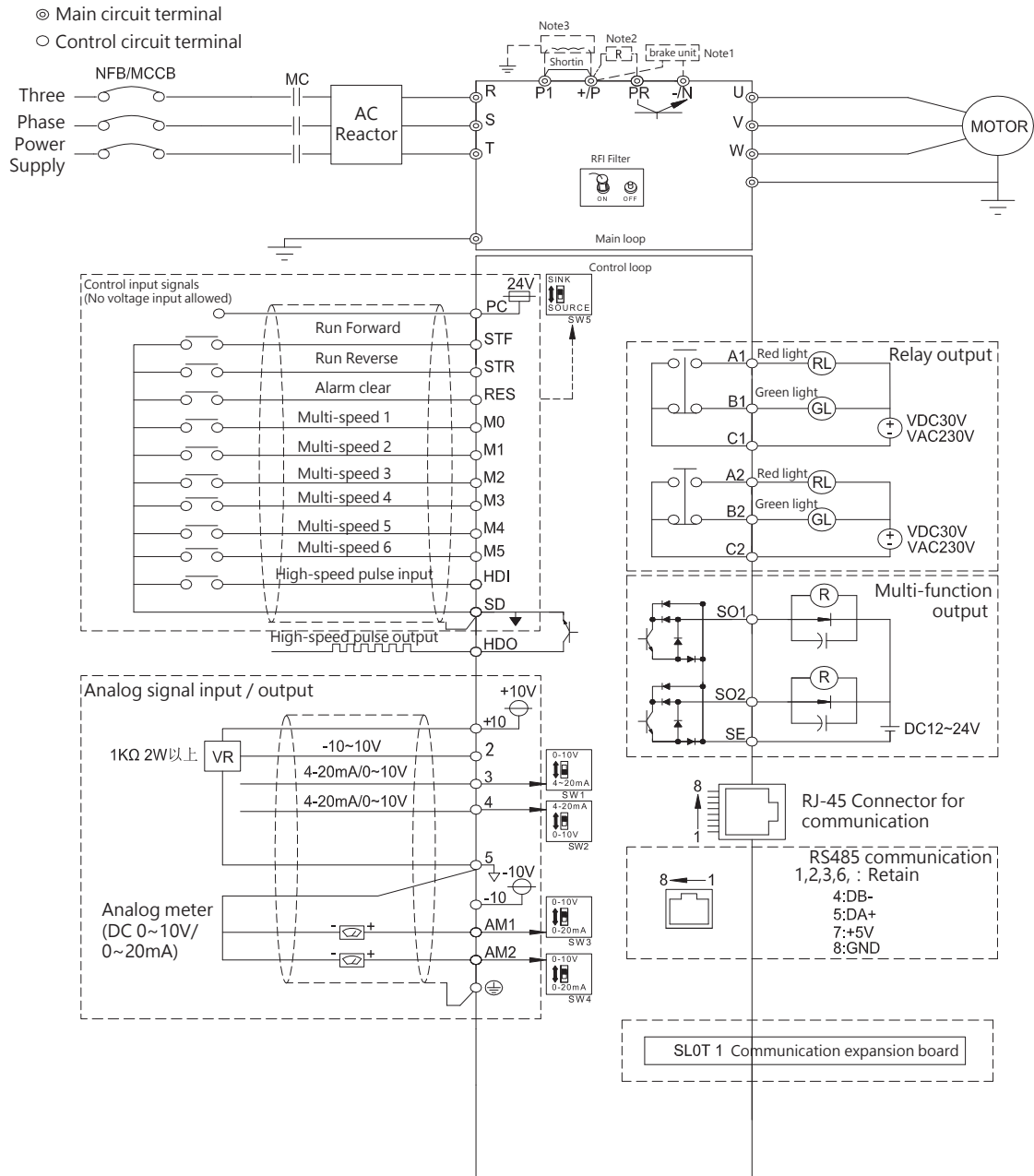


SF3

## Common Specifications

Control method		SVPWM, V/F, general flux vector control, sensorless vector control (SVC).
Output frequency range		0~599Hz
Frequency setting resolution	Digital setting	The resolution is 0.01 Hz when the frequency is set within 100 Hz; The resolution is 0.1 Hz when the frequency is set at above 100 Hz.
	Analog setting	11bit, DC 0~+5V or 4~20mA signal setting; 12bit, DC 0~+10V signal setting
Output frequency accuracy	Digital setting	Maximum target frequency±0.01%.
	Analog setting	Maximum target frequency±0.1%.
Speed control range		IM: When SVC, 1:200 , PM: When SVC,1:20.
Start torque		150% 0.5Hz (SVC)。
V/F characteristics		Constant torque curve, variable torque curve, five-point curve, VF separation.
Acceleration / deceleration curve characteristics		Linear acceleration /deceleration curve, S pattern acceleration / deceleration curve1 & 2 & 3.
Drive motor		Induction motor(IM), permanent magnet synchronous motor (SPM, IPM).
Current stall protection		The stall protection level can be set to 0~200%(06-01(P.22)). The default value is 120%(HD) /150%(ND).
Target frequency setting		TKeypad setting, DC 0~5V/10V signal, DC -10~+10V signal, DC 4~20 mA signal, multi- speed stage level setting, communication setting, HDI setting.
PID control		Please refer to SF3 user manual.
Built-in simple PLC		Supports 21 basic instructions and 14 application instructions, including PC editing software please refer to manual at build-in PLC chapter.
Operation panel	Operation monitoring	Output frequency, output current, output voltage, PN voltage, output torque, electronic thermal accumulation rate, temperature rising accumulation rate, output power, analog value input signal, external terminal status... ; at most 12 groups of alarm records, the last group of alarm message is recorded.
	LED indicator (8)	Forward rotation indicator, reverse rotation indicator, frequency monitoring indicator, voltage monitoring indicator, current monitoring indicator, mode switch indicator, PU control indicator and external terminal control indicator.
Communication		RS-485 communication, can select Shihlin/Modbus communication protocol, communication speed up to 115200bps, CANOpen protocol (with optional CP301 expanded board).
Protection mechanism / alarm function		Output short circuit protection, over-current protection, over-voltage protection, under-voltage protection, motor over-heat protection (06-00(P.9)), IGBT module over-heat protection, communication abnormality protection, PTC temperature protection etc. capacitor overheat, input and output phase loss, to-earth(ground) current leakage protection, circuit error detection...
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 m, but when altitude is above 1000 m, 2% of the rated current needs to be decreased per 1000 rising
	Vibration	Vibration below 5.9m/s <sup>2</sup> (0.6G).
	Grade of protection	IP20 for frames A, B and C, IP00 for frame D and above (IP20 accessories shall be optional)
	The degree of environmental pollution	2
Class of protection		Class I
International certification		CE

### Wiring Diagram



#### NOTE

1. Braking resistor wiring method between +P and PR is only for frame A, B and C. For frame D, E, G and H, the braking resistor is connect between (+P)-(-N).
2. DC reactor can be added between +P and P1. When DC reactor is not in used, short those terminals.
3. When adding DC reactor, the jumper between +P and P1 must be removed.

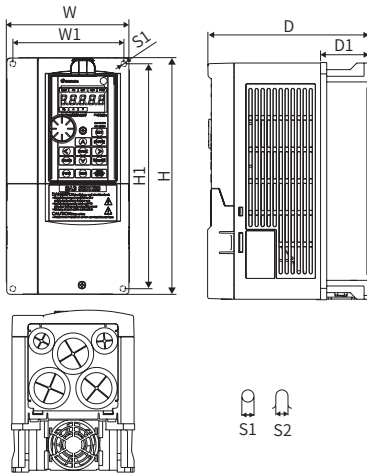


SF3

## Dimensions

Unit: mm

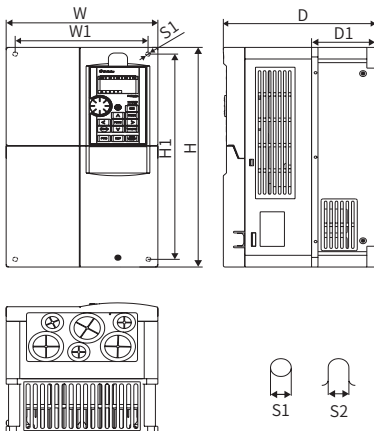
### Frame A



#### Frame A

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SF3-043-5.5K/3.7KG	130.0	116.0	250.0	236.0	170.0	51.3	6.2	6.2
SF3-043-7.5K/5.5KG								

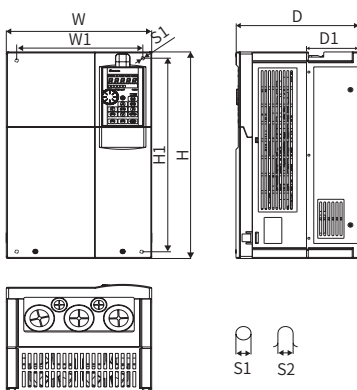
### Frame B



#### Frame B

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SF3-043-11K/7.5KG	190.0	173.0	320.0	303.0	190.0	80.5	8.5	8.5
SF3-043-15K/11KG								
SF3-043-18.5K/15KG								

### Frame C



#### Frame C

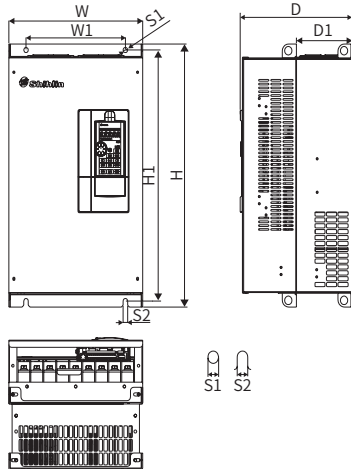
Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SF3-043-22K/18.5KG	250.0	231.0	400.0	381.0	210.0	89.5	8.5	8.5
SF3-043-30K/22KG								
SF3-043-37K/30KG								
SF3-043-45K/37KG								



### Dimensions

Unit: mm

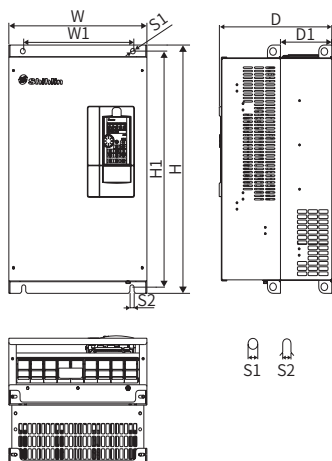
Frame D



Frame D

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SF3-043-55K/45KG	330.0	245.0	550.0	525.0	275.0	137.5	11.0	11.0
SF3-043-75K/55KG								
SF3-043-90K/75KG								

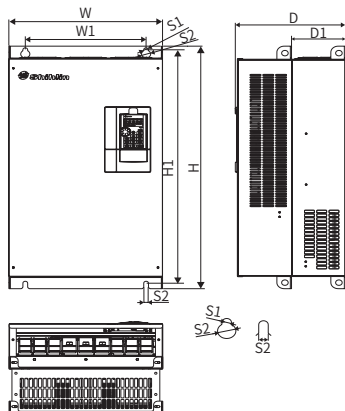
Frame E



Frame E

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SF3-043-110K/90KG	370.0	295.0	589.0	560.0	300.0	137.5	11.0	11.0
SF3-043-132K/110KG								

Frame F



Frame F

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)	S3 (mm)
SF3-043-160K/132KG	420.0	330.0	800.0	770.0	300.0	145.5	13.0	25.0	13.0
SF3-043-185K/160KG									

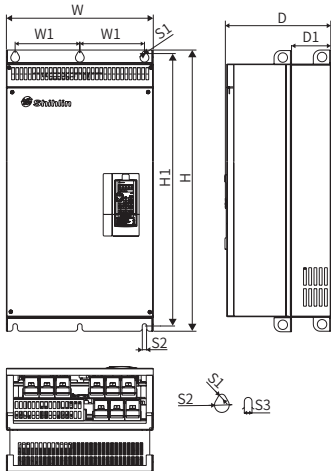


SF3

## Dimensions

Unit: mm

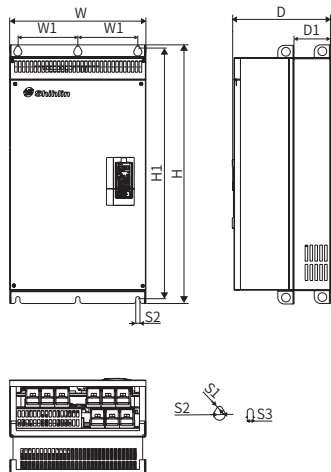
### Frame G



#### Frame G

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)	S3 (mm)
SF3-043-220K/185KG									
SF3-043-250K/220KG	500.0	180.0	870.0	850.0	360.0	150.0	13.0	25.0	13.0
SF3-043-280K/250KG									

### Frame H

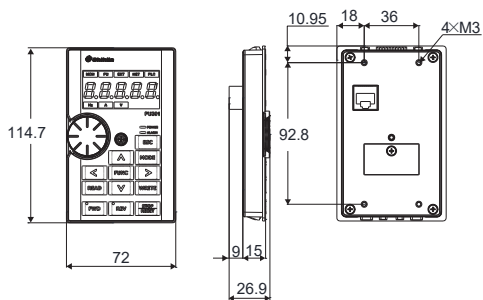


#### Frame H

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)	S3 (mm)
SF3-043-315K/280KG									
SF3-043-355K/315KG	600.0	230.0	1000.0	980.0	400.0	181.5	13.0	25.0	13.0

### Keypad Dimensions

PU301、PU301C



### Flat Spring Installation

SMK301 (PU301, PU301C Mounting kit)

