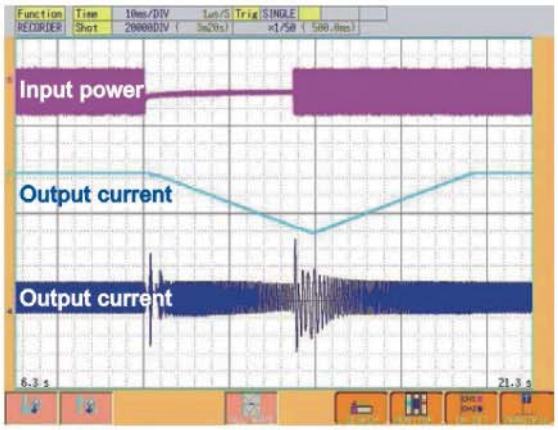
SA3 Series

Compact Design
Vector Control AC Drive

Product Features

Temporary Compensation at Low Voltage

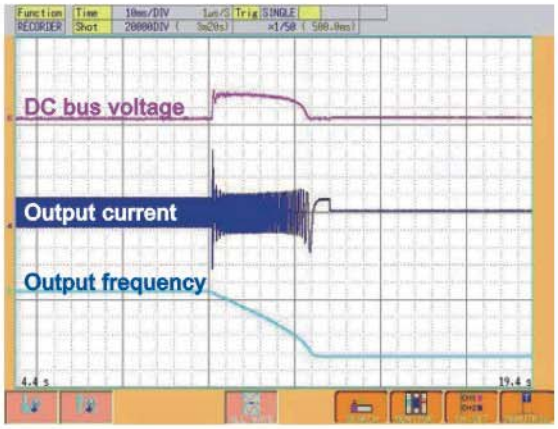
- During temporary power disruptions, output frequency can be controlled in order to maintain the DC bus voltage of the AC drive to control motor deceleration or stoppage.
- When power is restored, the AC drive will carry out re-acceleration to attain the frequency prior to power stoppage.
- May be applied to equipment which is not permitted to operate when idle.



By adjusting output frequency and voltage,

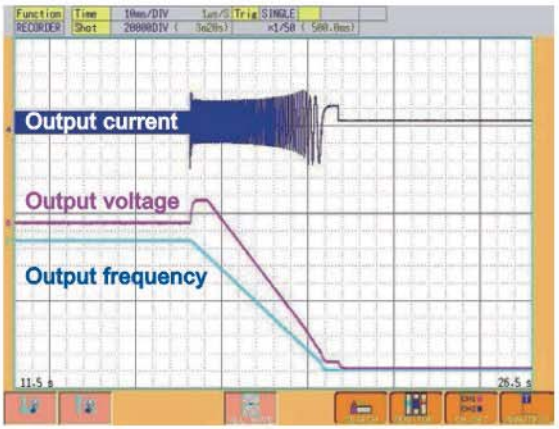
Regeneration Avoidance Functions

- By adjusting output frequency and voltage, DC bus voltage can be kept at a specified value and prevent overvoltage.



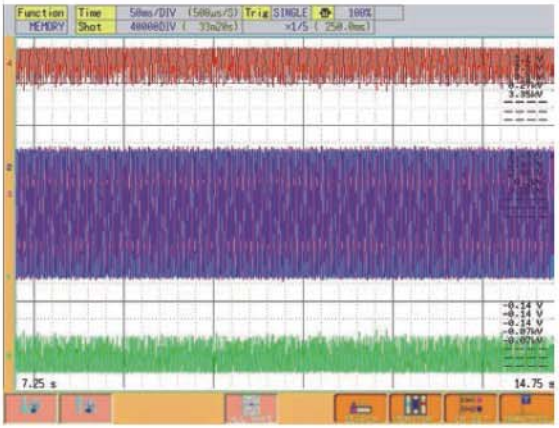
Magnetic Flux Brake

- When the motor is stopping, the magnetic flux will be transmitted to the motor coil to shorten deceleration time without relying on regenerative resistance.



Low-noise Carrier Wave Control (Soft-PWM)

- Motor noise is controlled so that the metallic sound is transformed into a more pleasing buzz.
- Low noise operations reduce the interference exerted upon external radio frequencies.



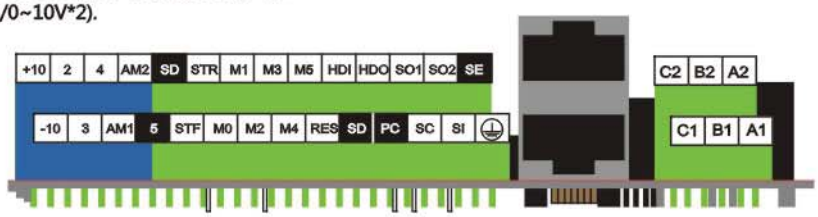
SA3 Series

Compact Design
Vector Control AC Drive

Product Features

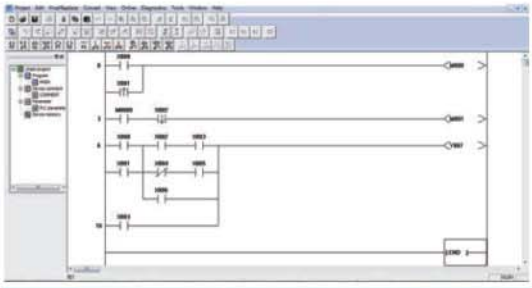
Multiple I/O Terminals

- Includes 10 sets of multi-functional combinational logic input terminals (with high-speed pulse inputs *1)
- Includes 5 sets of multi-functional combinational output terminals (including electric relay output *2, transistor output *2, and high-speed pulse output *1).
- Includes 3 sets of analog input signals (with -10~+10V*1 and 4~20mA/0~10V*2).
- Includes 2 sets of analog output signals (0~20mA/0~10V*2).
- 1 set of safety switch (S1~SC).



Built-in PLC Functions

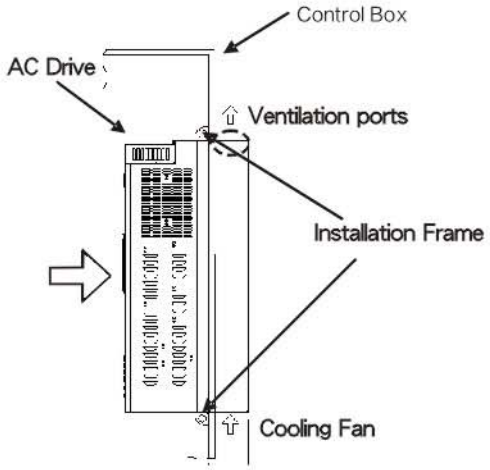
- Provides PLC programming software for easy editing program.
- Applicable for programming for small number of point sand capable of supporting multiple functions.



Item		SA3 PLC functions
Programming Language		Ladder diagram + Command
Basic commands		21
Applicable commands		14
Processing speed	Basic commands	1 μs
	Applicable commands	10 μs
Hidden program capacity		400 steps(0~399 steps)
I/O configuration	Input(X)	22 points(X0~X25, octal)
	Output(Y)	20 points (Y0~Y23, octal)
Supporting electric relay (M)	General	160 points, M0~M159
	Battery backed	80 points, M160~M239
	Special	64 points, M8000~M8063
Timer(T)	100ms	8 points, T0~T7, timer range: 0~6553.5 seconds
Counter(C)		8 points, C0~C7, counting range: 0~65535
Data register	General	32 points, D0~D31
	Battery backed	16 points, D32~D47
	Special	64 points, D8000~D8063

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.

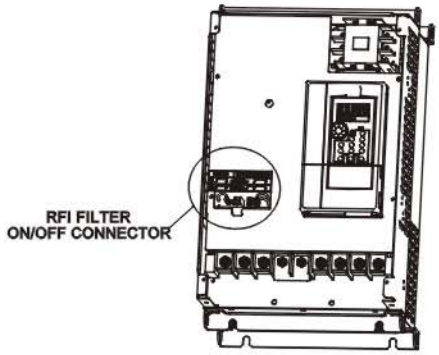


12 Sets of Alarm Records

- For each alarm that occurs, the output frequency, output current, output voltage, accumulated count of temperature increase, PN voltage, total AC drive operation time, AC drive operational status, and the year, month, day, hour, minute, and second of the alarm will be recorded (only when used with PU301C).

SA3 All-Series Built-in RFI Filter

- RFI is capable of suppressing electromagnetic interference



Improved Protection

- Output phase failure protection, output short circuit protection, ground leakage protection, low voltage protection, motor overheating signal (PTC), and electrolytic capacitor life inspection.

Electrical Specifications

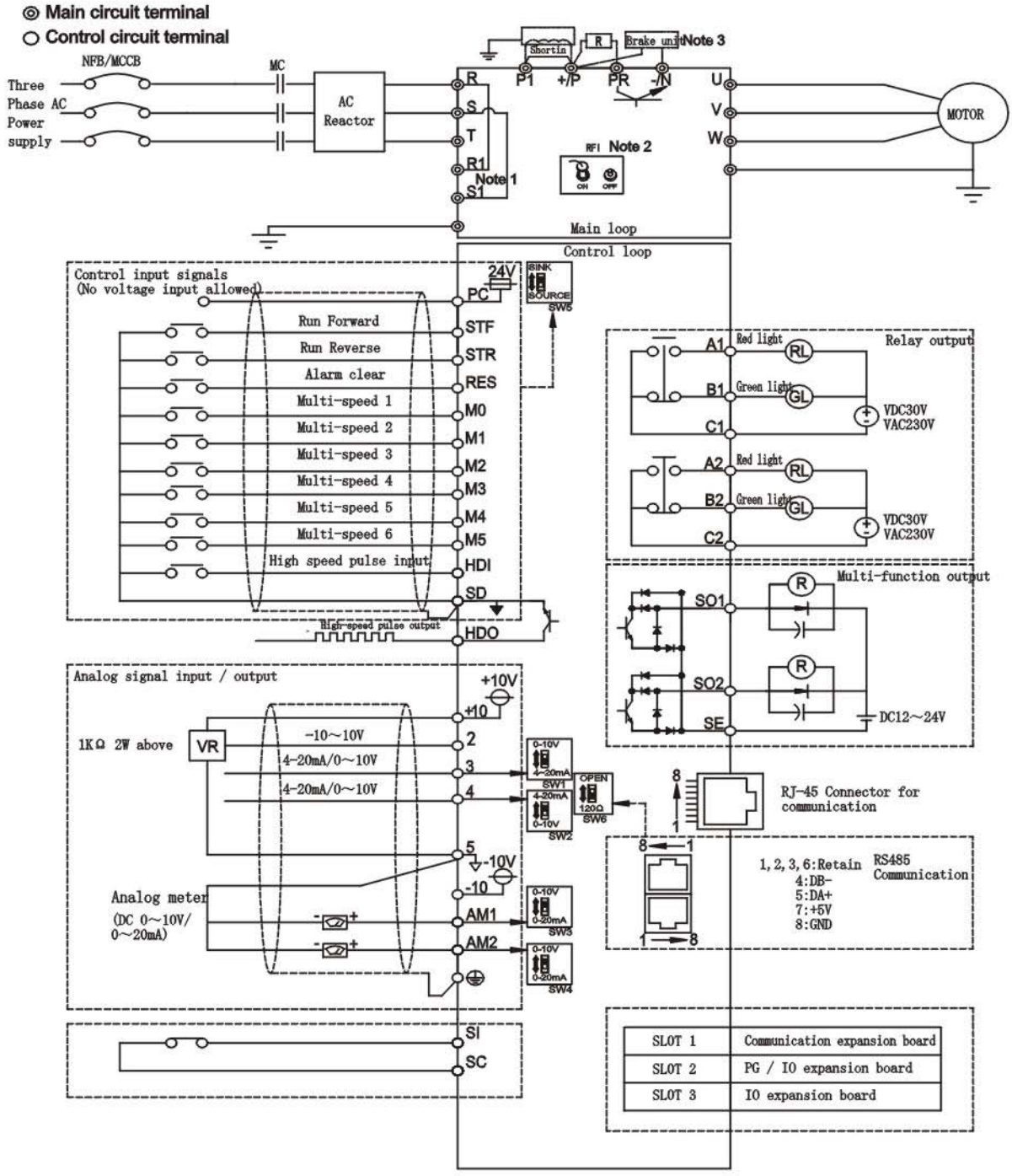
440 V Three-phase Series

Frame			A					B			C			D
Model SA3-043-□□□K □-			0.75K 1.5KF	1.5K 2.2KF	2.2K 3.7KF	3.7K 5.5KF	5.5K 7.5KF	7.5K 11KF	11K 15KF	15K 18.5KF	18.5K 22KF	22K 30KF	30K 37KF	37K 45KF
Output	HD	Rated output capacity (kVA)	2	3	4.6	6.9	10	14	18	25	29	34	46	56
		Rated output current (A)	3.0	4.2	6	9	12	17	24	32	38	45	60	73
		Applicable motor capacity (HP)	1	2	3	5	7.5	10	15	20	25	30	40	50
		Applicable motor capacity (kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37
		Overload current rating	150% 60 seconds 200% 3seconds (inverse time characteristics)											
		Carrier frequency (kHz)	1~15kHz											1~9kHz
	ND	Rated output capacity (kVA)	3	4.6	6.9	10	14	18	25	29	34	46	56	69
		Rated output current (A)	4.2	6	9	12	17	24	32	38	45	60	73	91
		Applicable motor capacity (HP)	2	3	5	7.5	10	15	20	25	30	40	50	60
		Applicable motor capacity (kW)	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45
		Overload current rating	120% 60seconds (inverse time characteristics)											
		Carrier frequency (kHz)	1~15kHz											1~9kHz
	Maximum output voltage		Three-phase 380-480V											
Power supply	Rated power voltage		Three-phase 380-480V 50Hz / 60Hz											
	Power voltage permissible fluctuation		Three-phase 342-528V 50Hz / 60Hz											
	Power frequency permissible fluctuation		±5%											
	Power source capacity (kVA)		2.5	4.5	6.9	10.4	11.5	16	20	27	32	41	52	65
Cooling method			Self cooling	Forced air cooling										
Weight (kg)			3.15	3.15	3.15	3.15	3.15	6	6	6	9.8	9.8	9.8	33

Frame			D			E		F	G				H	
Model SA3-043-□□□K □-			45K 55KF	55K 75KF	75K 90KF	90K 110KF	110K 132KF	132K 160KF	160K 185KF	185K 220KF	220K 250KF	250K 280KF	280K 315KF	315K 355KF
Output	HD	Rated output capacity (kVA)	69	84	114	137	168	198	236	295	367	402	438	491
		Rated output current (A)	91	110	150	180	220	260	310	340	425	480	530	620
		Applicable motor capacity (HP)	60	75	100	120	150	175	215	250	300	335	375	420
		Applicable motor capacity (kW)	45	55	75	90	110	132	160	185	220	250	280	315
		Overload current rating	150% 60 seconds 200% 3seconds (inverse time characteristics)											
		Carrier frequency (kHz)	1~9kHz										1~6kHz	
	ND	Rated output capacity (kVA)	84	114	137	168	198	236	295	367	402	438	491	544
		Rated output current (A)	110	150	180	220	260	310	340	425	480	530	620	683
		Applicable motor capacity (HP)	75	100	120	150	175	215	250	300	335	375	420	475
		Applicable motor capacity (kW)	55	75	90	110	132	160	185	220	250	280	315	355
		Overload current rating	120% 60seconds (inverse time characteristics)											
		Carrier frequency (kHz)	1~9kHz										1~6kHz	
	Maximum output voltage		Three-phase 380-480V											
Power supply	Rated power voltage		Three-phase 380-480V 50Hz / 60Hz											
	Power voltage permissible fluctuation		Three-phase 342-528V 50Hz / 60Hz											
	Power frequency permissible fluctuation		±5%											
	Power source capacity (kVA)		79	100	110	137	165	198	247	295	367	402	438	491
Cooling method				Powered fan-cooling										
Weight (kg)			33	33	33	42.7	42.7	56.5	84	84	84	84	123	123

Note: The test conditions of rated output current, rated output capacity and frequency converter AC Drive power consumption are: the carrier frequency (P.72) is at the set value; the frequency converter/AC Drive output voltage is at 440V; the output frequency is at 60Hz, and the ambient temperature is 40°C.

Wiring Diagram

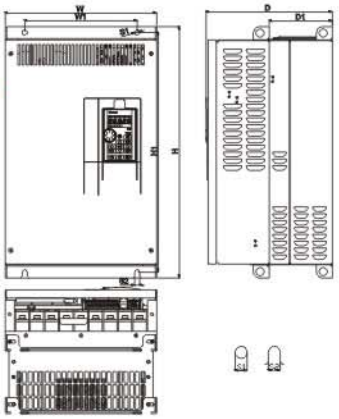


NOTE

1. R1, S1 terminal is only D ~ H framework, specific wiring please refer to the section 3.7.5.
2. RFI filter Settings, please refer to section 3.7.4.
3. The brake resistor connection approach between +/P and PR is for Frame A, B and C only. For connecting the brake unit of Frame D, E, F, G and H to between +/P and -/N, please refer to the Section 3.7.1 for details.
4. The DC resistor between +/P and P1 is optional. Please short +/P and P1 when AC resistor is not used.
5. When adding DC reactors, please remove the short circuit piece between P1 and +/P. Please refer to the Section 3.6.4 for the reactor type.
6. Please refer to the Section 5.3.9 for wiring of HDO.

Dimensions

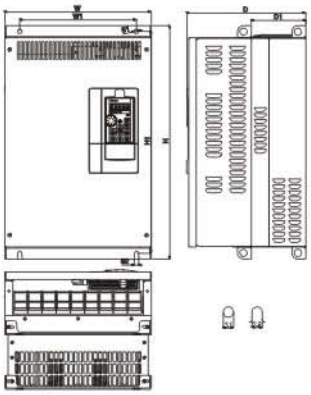
Frame D



Frame D

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SA3-043-37K/45KF	330.0	245.0	550.0	525.0	275.0	137.5	11.0	11.0
SA3-043-45K/55KF								
SA3-043-55K/75KF								
SA3-043-75K/90KF								
SA3-023-22K/30KF								
SA3-023-30K/37KF								
SA3-023-37K/45KF								

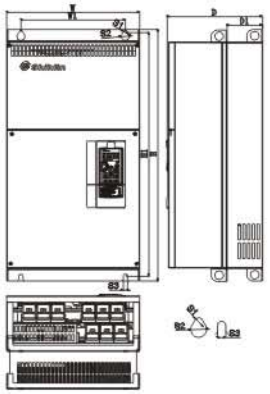
Frame E



Frame E

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)
SA3-043-90K/110KF	370.0	295.0	589.0	560.0	300.0	137.5	11.0	11.0
SA3-043-110K/132KF								
SA3-023-45K/55KF								
SA3-023-55K/75KF								

Frame F



Frame F

Model type	W (mm)	W1 (mm)	H (mm)	H1 (mm)	D (mm)	D1 (mm)	S1 (mm)	S2 (mm)	S3 (mm)
SA3-043-132K/160KF	420.0	340.0	800.0	770.0	300.0	145.5	13.0	25.0	13.0
SA3-023-75K/90KF									