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Single-phase 115 V (Models w/o Built-in EMC Filter)					
Frame			A		C
Applicable Motor Output (kW)			0.2	0.4	0.75
Applicable Motor Output (HP)			1/4	1/2	1
Inverter Output	Heavy Duty	Rated Output Current (A)	1.6	2.5	4.8
	Normal Duty	Rated Output Current (A)	1.8	2.7	5.5
Input	Rated Voltage / Frequency		1-phase AC 100 V ~ 120 V (-15% ~ +10%), 50 / 60 Hz		
	Mains Input Voltage Range		85 ~ 132 V		
	Mains Frequency Range		47 ~ 63 Hz		
Carrier Frequency (kHz)			2~15 (default 4)		
Brake Chopper			Built-in		
DC Reactor			Optional		
AC Reactor			Optional		
Cooling Method			Natural air cooling		Fan cooling
Size: W x H (mm)			68 × 128		87 × 157
Size: D (mm)			96	125	152

Single-phase 230 V (Models with Built-in EMC Filter)							
Frame			B			C	
Applicable Motor Output (kW)			0.2	0.4	0.75	1.5	2.2
Applicable Motor Output (HP)			1/4	1/2	1	2	3
Inverter Output	Heavy Duty	Rated Output Current (A)	1.6	2.8	4.8	7.5	11
	Normal Duty	Rated Output Current (A)	1.8	3.2	5	8.5	12.5
Input	Rated Voltage / Frequency		1-phase AC 200 V ~ 240 V (-15% ~ +10%), 50 / 60 Hz				
	Mains Input Voltage Range		170 ~ 265 V				
	Mains Frequency Range		47 ~ 63 Hz				
Carrier Frequency (kHz)			2~15 (default 4)				
Brake Chopper			Built-in				
DC Reactor			Optional				
AC Reactor			Optional				
Cooling Method			Natural air cooling	Fan cooling			
Size: W x H (mm)			72 × 142			87 × 157	
Size: D (mm)			159			179	

Single-phase 230 V (Models w/o an EMC Filter)					
Frame			A	B	C
Cooling Method			Natural air cooling		Fan cooling
Size: W x H (mm)			68 × 128	68 × 128	72 × 142	87 × 157
Size: D (mm)			96	125	143	152

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30 V (Models w/o Built-in										
			A			B				
Applicable Motor Output (kW)			0.2	0.4	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15
Applicable Motor Output (HP)			1/4	1/2	1	2	3	5	7.5	10	15	20
Inverter Output	Heavy Duty	Rated Output Current (A)	1.6	2.8	4.8	7.5	11	17	25	33	49	65
	Normal Duty	Rated Output Current (A)	1.8	3.2	5	8	12.5	19.5	27	36	51	69
Input	Rated Voltage/Frequency		3-phase AC 200 V~240 V (-15%~+10%), 50/60 Hz									
	Mains Input Voltage Range		170~265 V									
	Mains Frequency Range		47~63 Hz									
Carrier Frequency (kHz)			2~15 (default 4)									
Brake Chopper			Built-in									
DC Reactor			Optional									
AC Reactor			Optional									
Cooling Method			Natural air cooling			Fan cooling						
Size: W x H (mm)			68×128			72×142	87×157		109×207	130×250	175×300	
Size: D (mm)			96	110	143	143	152		154	185	192	

3-phase 460 V (Models with Built-in EMC Filter)												
Frame			B			C		D		E		F
Applicable Motor Output (kW)			0.4	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15	18.5	22
Applicable Motor Output (HP)			1/2	1	2	3	5	7.5	10	15	20	25	30
Inverter Output	Heavy Duty	Rated Output Current (A)	1.5	2.7	4.2	5.5	9	13	17	25	32	38	45
	Normal Duty	Rated Output Current (A)	1.8	3	4.6	6.5	10.5	15.7	20.5	28	36	41.5	49
Input	Rated Voltage/Frequency		3-phase AC 380 V~480 V (-15%~+10%), 50/60 Hz										
	Mains Input Voltage Range		323~528 V										
	Mains Frequency Range		47~63 Hz										
Carrier Frequency (kHz)			2~15 (default 4)										
Brake Chopper			Built-in										
DC Reactor			Optional										
AC Reactor			Optional										
Cooling Method			Fan cooling										
Size: W x H (mm)			72 × 142			87×157		109×207		130×250		175×300	
Size: D (mm)			159			179		187		219		244	

3-phase 460 V (Models w/o an EMC Filter)							
Frame	A		B	C	D	E	F
Cooling Method	Natural air cooling		Fan cooling				
Size: W x H (mm)	68×128		72×142	87×157	109×207	130×250	175×300
Size: D (mm)	129	143	143	152	154	185	192

3-phase 575 V (Models w/o an EMC Filter)							
Frame	A	B	C		D		
Applicable Motor Output (kW)	0.75	1.5	2.2	3.7	5.5	7.5	
Applicable Motor Output (HP)	1	2	3	5	7.5	10	
Inverter Output	Heavy Duty	Rated Output Current (A)	1.7	3	4.2	6.6	9.9	12.2
	Normal Duty	Rated Output Current (A)	2.1	3.6	5	8	11.5	15
Input	Rated Voltage/Frequency		3-phase AC 500 V~600 V (-15%~+10 %), 50/60 Hz					
	Mains Input Voltage Range		425~660					
	Mains Frequency Range		47~63					
Carrier Frequency (kHz)			2~15 (default 4)					
Brake Chopper			Built-in					
DC Reactor			Optional					
AC Reactor			Optional					
Cooling Method			Natural air cooling	Fan cooling				
Size: W x H (mm)			68×128	72×142	87×157		109×207	
Size: D (mm)			143	143	152		154	

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Control Functions	Control Methods	V/F, SVC, FOC Sensorless
	Applicant Motors	Induction motors (IM), interior permanent magnet (IPM) motors, and surface permanent magnet (SPM) motors
	Max. Output Frequency	Standard model: 599.00 Hz / High speed model: 1500.0 Hz (with derating, V/F control only)
	Starting Torque*	150% / 3 Hz (V/f, SVC control for IM, heavy duty) 100% / (1/20 of motor rated frequency) (SVC control for PM, heavy duty) 200% / 0.5 Hz (FOC Sensorless control for IM, heavy duty)
	Speed Control Range*	1:50 (V/f, SVC control for IM, heavy duty) 1:20 (SVC control for PM, heavy duty) 1:100 (FOC Sensorless control for IM, heavy duty)
	Overload Tolerance	Normal Duty (ND): 120% of rated output current for 60 seconds; 150% of rated output current for 3 seconds Heavy Duty (HD): 150% of rated output current for 60 seconds; 200% of rated output current for 3 seconds
	Frequency Setting Signal	0 ~ +10 V / -10 V ~ +10 V, 4 ~ 20 mA / 0 ~ +10 V, 1 pulse input (33 kHz), 1 pulse output (33 kHz)
	Main Control Functions	Multiple motor switches (max. 4 independent motor parameter settings), fast run, Deceleration Energy Back (DEB) function, wobble frequency function, fast deceleration function, master and auxiliary frequency source selectable, momentary power loss ride thru, speed search, over-torque detection, 16-step speed (max.), accel/decel time switch, S-curve accel/decel, 3-wire sequence, JOG frequency, upper/lower limits for frequency reference, DC injection braking at start and stop, 2 sets of PID controls , built-in PLC (2k steps), simple positioning function, Modbus integrated as standard
Protection Functions	Motor Protection	Overcurrent protection, overvoltage protection, over-temperature protection, phase failure protection
	Stall Prevention	Stall prevention during acceleration, deceleration and running independently
Accessories	Communication Cards	PROFIBUS DP, DeviceNet, Modbus TCP, EtherNet/IP, CANopen, EtherCAT
	External DC power supply	EMM-BPS01 (DC 24V power supply card)
Digital Controller		A removable keypad as standard
Certifications		UL, CE, RoHS, RCM, TUV, REACH

***Control accuracy may vary depending on the environment, application conditions, different motors or encoder. For details, please contact our company or your local distributor.**

Operating Environment	Installation Location		IEC60364-1 / IEC60664-1 Pollution degree 2, Indoor use only	
	Ambient Temperature (˚C)	Operation	IP20 / UL Open Type	-20 to 50 -20 to 60 (needs derating)
			IP40 / NEMA 1 / UL Type 1	-20 to 40 -20 to 50 (needs derating)
			IP66 / NEMA 4X / UL Type 4X	
			Zero stacking Installation	
		Storage		-40 to 85
		Transportation		-20 to 70
	Rated Humidity	Operation		Max. 90%
		Storage / Transportation		Max. 95%
	Air Pressure (kPa)	Operation		86 ~ 106
		Storage / Transportation		70 ~ 106
	Pollution Level	Compliance to IEC60721-3-3, 3C2		
	Altitude	An altitude of 0 ~ 1000 m for normal operation (derating is required for installation at an altitude above 1000 m)		
Vibration		Compliance to IEC 60068-2-6		
Shock		Compliance to IEC/EN 60068-2-27		

Please refer to MS300 user manual for more details.

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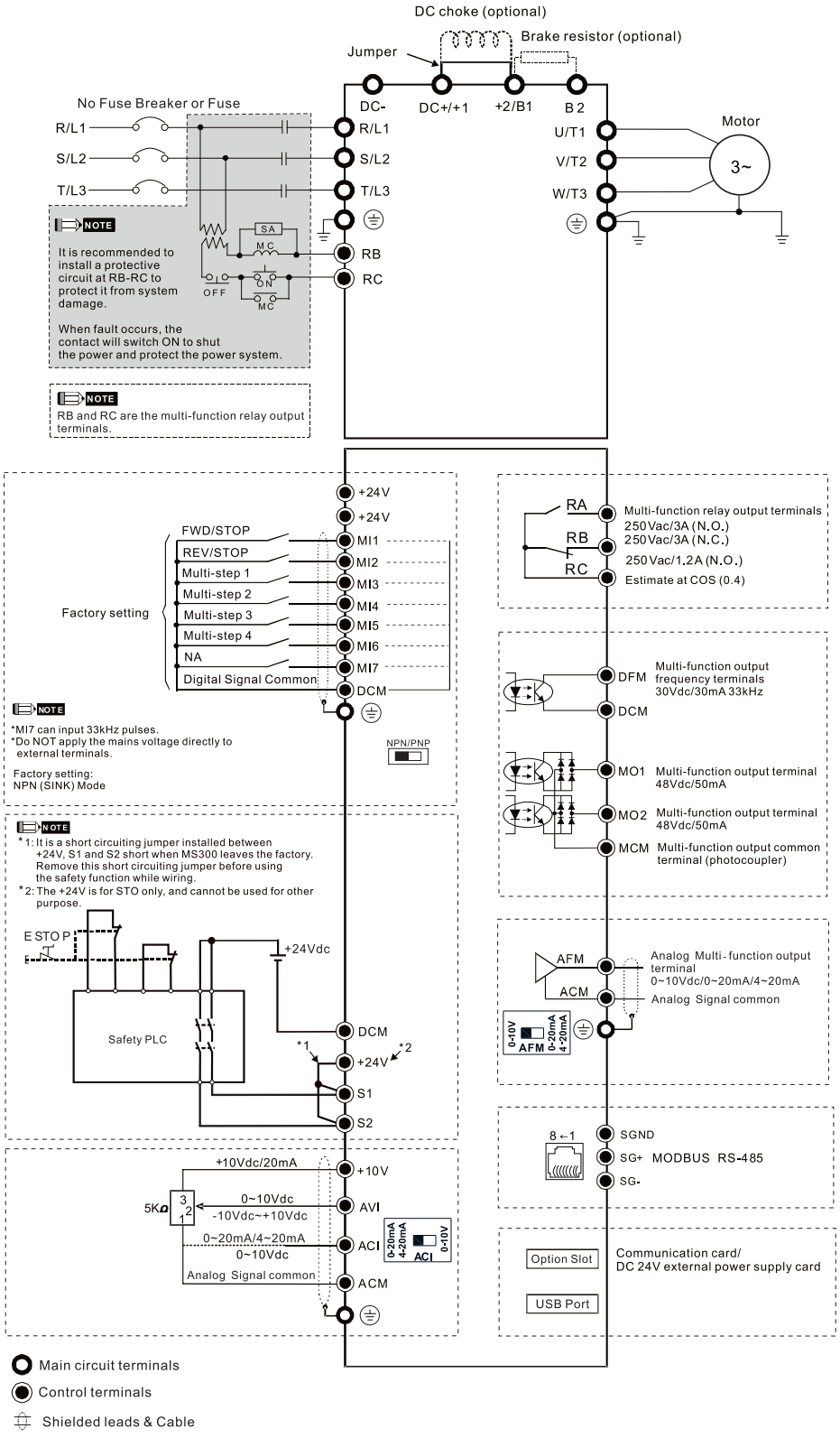
Input: Single-phase / 3-phase power



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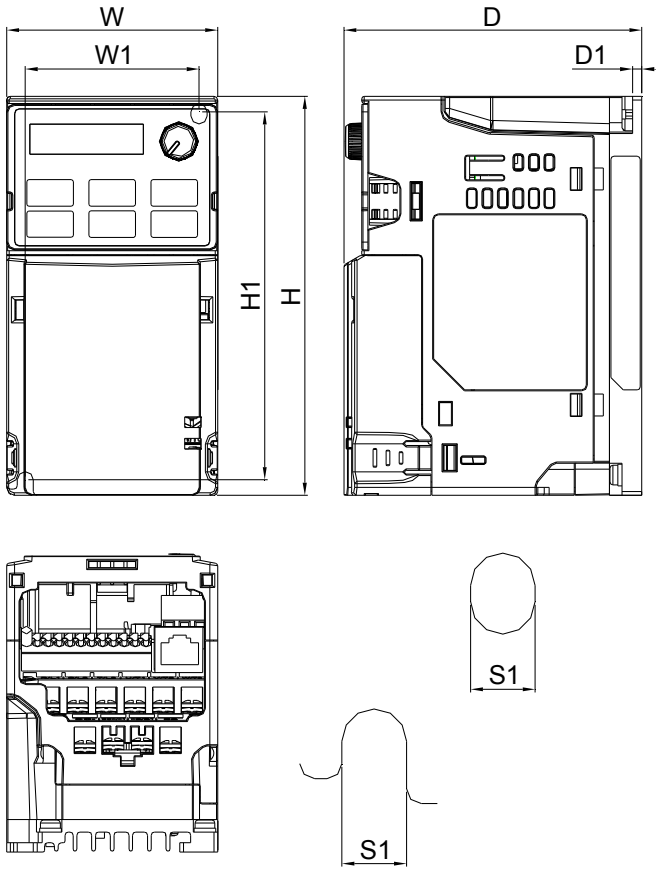
IP20 / IP40

Frame A



Mounting hole

MODEL FRAME A1	FRAME A2	FRAME A3	FRAME A4	FRAME A5
VFD1A6MS11ANSAA	VFD2A8MS23ANSAA	VFD2A5MS11ANSAA	VFD1A5MS43ANSAA	VFD4A8MS23ANSAA
VFD1A6MS11ENSAA	VFD2A8MS23ENSAA	VFD2A5MS11ENSAA	VFD1A5MS43ENSAA	VFD4A8MS23ENSAA
VFD1A6MS21ANSAA		VFD2A8MS21ANSAA		VFD2A7MS43ANSAA
VFD1A6MS21ENSAA		VFD2A8MS21ENSAA		VFD2A7MS43ENSAA
VFD1A6MS23ANSAA				VFD1A7MS53ANSAA
VFD1A6MS23ENSAA				

Frame		W	H	D	W1	H1	D1	S1
A1	mm	68.0	128.0	96.0	56.0	118.0	3.0	5.2
	inch	2.68	5.04	3.78	2.20	4.65	0.12	0.20
Frame		**W**	**H**	**D**	**W1**	**H1**	**D1**	**S1**
A2	mm	68.0	128.0	110.0	56.0	118.0	3.0	5.2
	inch	2.68	5.04	4.33	2.20	4.65	0.12	0.20
Frame		**W**	**H**	**D**	**W1**	**H1**	**D1**	**S1**
A3	mm	68.0	128.0	125.0	56.0	118.0	3.0	5.2
	inch	2.68	5.04	4.92	2.20	4.65	0.12	0.20

Frame		W	H	D	W1	H1	D1	S1
A4	mm	68.0	128.0	129.0	56.0	118.0	3.0	5.2
	inch	2.68	5.04	5.08	2.20	4.65	0.12	0.20
Frame		**W**	**H**	**D**	**W1**	**H1**	**D1**	**S1**
A5	mm	68.0	128.0	143.0	56.0	118.0	3.0	5.2
	inch	2.68	5.04	5.63	2.20	4.65	0.12	0.20

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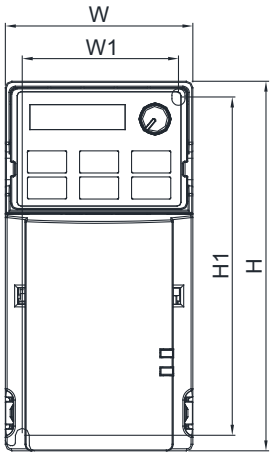
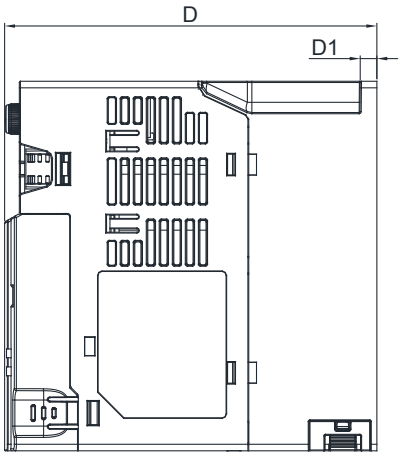
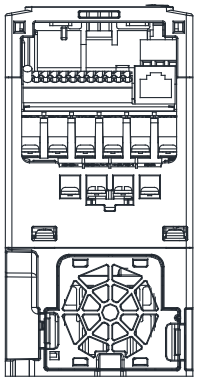
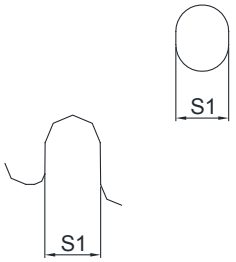
Frame B









Mounting hole

MODEL FRAME B1		FRAME B2	FRAME B3	
Standard Models: VFD7A5MS23ANSAA VFD7A5MS23ENSAA VFD4A2MS43ANSAA VFD4A2MS43ENSAA VFD3A0MS53ANSAA	High Speed Models: VFD7A5MS23ANSHA VFD7A5MS23ENSHA VFD4A2MS43ANSHA VFD4A2MS43ENSHA	Standard Models: VFD4A8MS21ANSAA VFD4A8MS21ENSAA	Standard Models: VFD1A6MS21AFSAA VFD2A8MS21AFSAA VFD4A8MS21AFSAA VFD1A5MS43AFSAA VFD2A7MS43AFSAA VFD4A2MS43AFSAA	High Speed Models: VFD4A2MS43AFSHA

Frame		W	H	D	W1	H1	D1	S1
B1	mm	72.0	142.0	143.0	60.0	130.0	6.4	5.2
	inch	2.83	5.59	5.63	2.36	5.12	0.25	0.20
Frame		W	H	D	W1	H1	D1	S1
B2	mm	72.0	142.0	143.0	60.0	130.0	3.0	5.2
	inch	2.83	5.59	5.63	2.36	5.12	0.12	0.20
Frame		W	H	D	W1	H1	D1	S1
B3	mm	72.0	142.0	159.0	60.0	130.0	4.3	5.2
	inch	2.83	5.59	6.26	2.36	5.12	0.17	0.20

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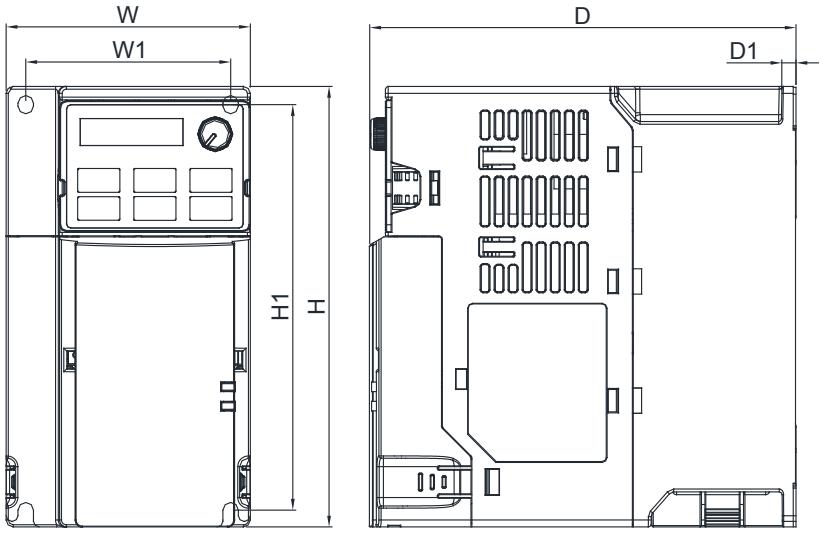
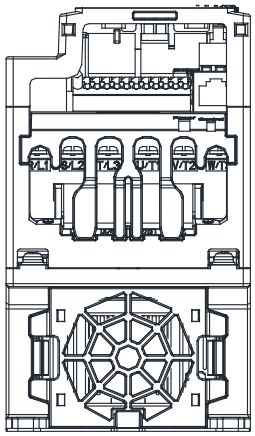
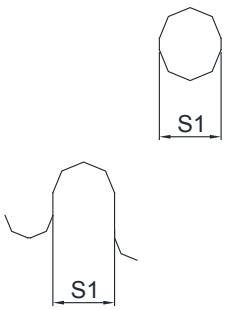
IP20 / IP40

Frame C







Mounting hole

MODEL FRAME C1				FRAME C2	
Standard Models:		High Speed Models:		Standard Models:	High Speed Models:
VFD4A8MS11ANSAA	VFD4A8MS11ENSAA	VFD7A5MS21ANSHA	VFD7A5MS21ENSHA	VFD7A5MS21AFSAA	VFD7A5MS21AFSHA
VFD7A5MS21ANSAA	VFD7A5MS21ENSAA	VFD11AMS21ANSHA	VFD11AMS21ENSHA	VFD11AMS21AFSAA	VFD11AMS21AFSHA
VFD11AMS21ANSAA	VFD11AMS21ENSAA	VFD11AMS23ANSHA	VFD11AMS23ENSHA	VFD5A5MS43AFSAA	VFD5A5MS43AFSHA
VFD11AMS23ANSAA	VFD11AMS23ENSAA	VFD17AMS23ANSHA	VFD17AMS23ENSHA	VFD9A0MS43AFSAA	VFD9A0MS43AFSHA
VFD17AMS23ANSAA	VFD17AMS23ENSAA	VFD5A5MS43ANSHA	VFD5A5MS43ENSHA		
VFD5A5MS43ANSAA	VFD5A5MS43ENSAA	VFD9A0MS43ANSHA	VFD9A0MS43ENSHA		
VFD9A0MS43ANSAA	VFD9A0MS43ENSAA				
VFD4A2MS53ANSAA	VFD6A6MS53ANSAA				

Frame		W	H	D	W1	H1	D1	S1
C1	mm	87.0	157.0	152.0	73.0	144.5	5.0	5.5
	inch	3.43	6.18	5.98	2.87	5.69	0.20	0.22
Frame		**W**	**H**	**D**	**W1**	**H1**	**D1**	**S1**
C2	mm	87.0	157.0	179.0	73.0	144.5	5.0	5.5
	inch	3.43	6.18	7.05	2.87	5.69	0.20	0.22

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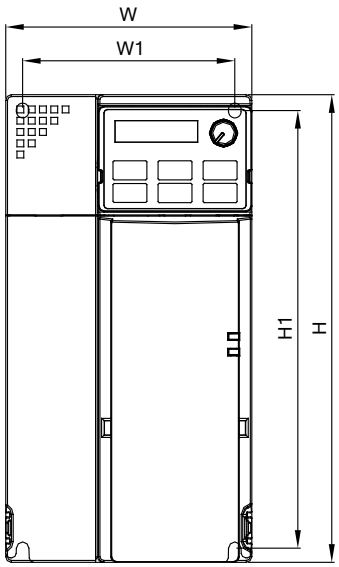
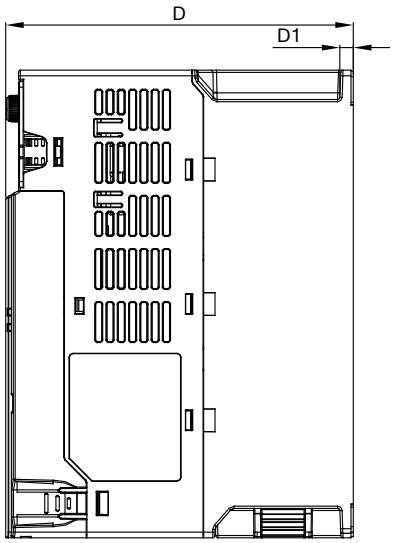
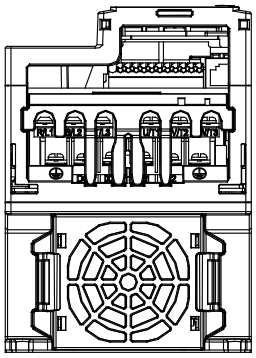
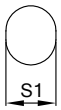
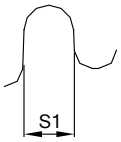
Frame D











Mounting hole

MODEL FRAME D1		FRAME D2	
Standard Models:	High Speed Models:	Standard Models:	High Speed Models:
VFD25AMS23ANSAA	VFD25AMS23ANSHA	VFD13AMS43AFSAA	VFD13AMS43AFSHA
VFD25AMS23ENSAA	VFD25AMS23ENSHA	VFD17AMS43AFSAA	VFD17AMS43AFSHA
VFD13AMS43ANSAA	VFD13AMS43ANSHA		
VFD13AMS43ENSAA	VFD13AMS43ENSHA		
VFD17AMS43ANSAA	VFD17AMS43ANSHA		
VFD17AMS43ENSAA	VFD17AMS43ENSHA		
VFD9A9MS53ANSAA	VFD12AMS53ANSAA		

Frame		W	H	D	W1	H1	D1	S1
D1	mm	109.0	207.0	154.0	94.0	193.8	6.0	5.5
	inch	4.29	8.15	6.06	3.70	7.63	0.24	0.22
Frame		W	H	D	W1	H1	D1	S1
D2	mm	109.0	207.0	187.0	94.0	193.8	6.0	5.5
	inch	4.29	8.15	7.36	3.70	7.36	0.24	0.22

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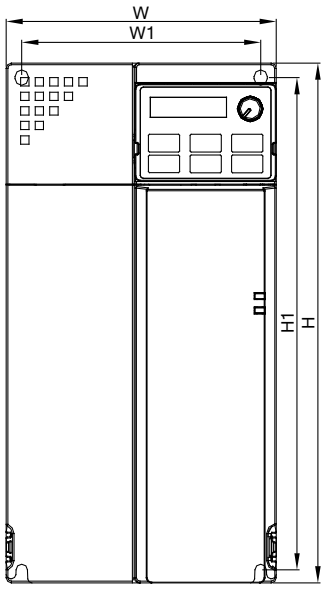
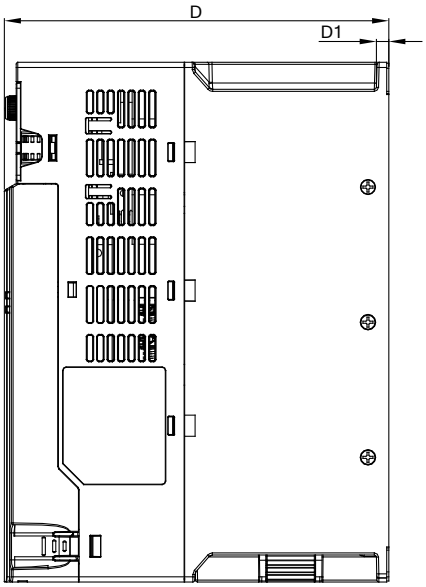
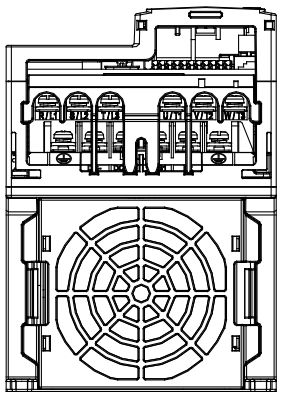
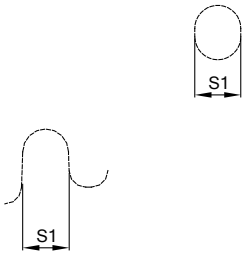
IP20 / IP40 Models

Frame E









Mounting hole

MODEL FRAME E1		FRAME E2	
Standard Models:	High Speed Models:	Standard Models:	High Speed Models:
VFD33AMS23ANSAA	VFD33AMS23ANSHA	VFD25AMS43AFSAA	VFD25AMS43AFSHA
VFD33AMS23ENSAA	VFD33AMS23ENSHA	VFD32AMS43AFSAA	VFD32AMS43AFSHA
VFD49AMS23ANSAA	VFD49AMS23ANSHA		
VFD49AMS23ENSAA	VFD49AMS23ENSHA		
VFD25AMS43ANSAA	VFD25AMS43ANSHA		
VFD25AMS43ENSAA	VFD25AMS43ENSHA		
VFD32AMS43ANSAA	VFD32AMS43ANSHA		
VFD32AMS43ENSAA	VFD32AMS43ENSHA		

Frame		W	H	D	W1	H1	D1	S1
E1	mm	130.0	250.0	185.0	115.0	236.8	6.0	5.5
	inch	5.12	9.84	7.83	4.53	9.32	0.24	0.22
Frame		W	H	D	W1	H1	D1	S1
E2	mm	130.0	250.0	219.0	115.0	236.8	6.0	5.5
	inch	5.12	9.84	8.62	4.53	9.32	0.24	0.22

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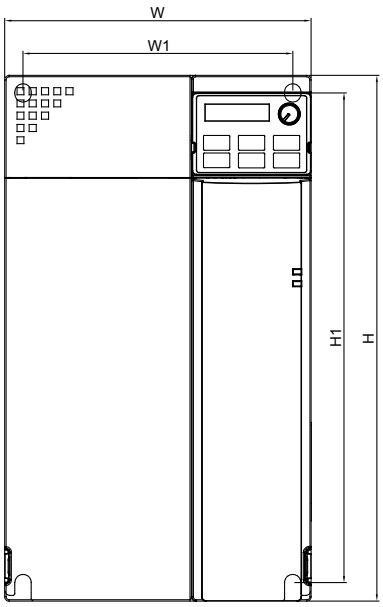
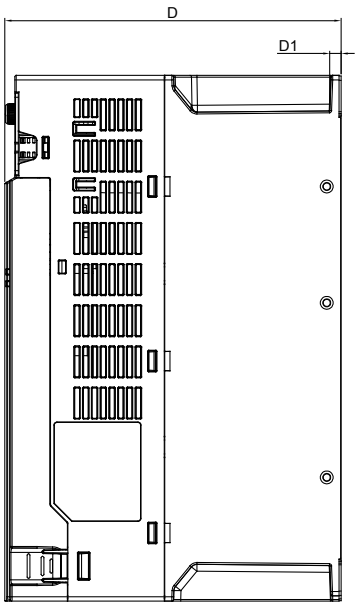
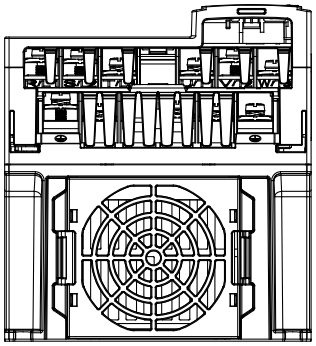
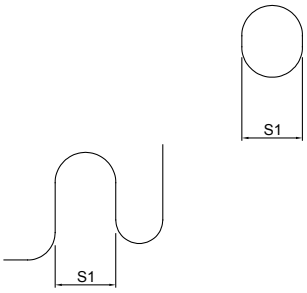
Frame F









Mounting hole

MODEL FRAME F1		FRAME F2	
Standard Models:	High Speed Models:	Standard Models:	High Speed Models:
VFD65AMS23ANSAA	VFD65AMS23ANSHA	VFD38AMS43AFSAA	VFD38AMS43AFSHA
VFD65AMS23ENSAA	VFD65AMS23ENSHA	VFD45AMS43AFSAA	VFD45AMS43AFSHA
VFD38AMS43ANSAA	VFD38AMS43ANSHA		
VFD38AMS43ENSAA	VFD38AMS43ENSHA		
VFD45AMS43ANSAA	VFD45AMS43ANSHA		
VFD45AMS43ENSAA	VFD45AMS43ENSHA		

Frame		W	H	D	W1	H1	D1	S1
F1	mm	175.0	300.0	192.0	154.0	279.5	6.5	8.4
	inch	6.89	11.81	7.56	6.06	11.00	0.26	0.33
Frame		W	H	D	W1	H1	D1	S1
F2	mm	175.0	300.0	244.0	154.0	279.5	6.5	8.4
	inch	6.89	11.81	9.61	6.06	11.00	0.26	0.33