

Sumitomo Drive Technologies
Always on the Move

Inverter HF-320 α Series

Sensorless Vector Inverter



HF-320 α Series Inverters

▶ High-Torque

200% startup torque at 1Hz. Optimum performance even at low speeds. Automatic tuning function makes vector control easy.

▶ Extended Service Life

The HF-320α design incorporates a premium main circuit capacitor and automatic cooling fan to extend service life up to ten years. Simple replacement of consumable parts reduces maintenance requirements.

▶ Built-in Dynamic Braking Transistor

A built-in dynamic braking transistor on standard models enables dynamic braking by adding an optional braking resistor.

▶ Built-in Noise Filter

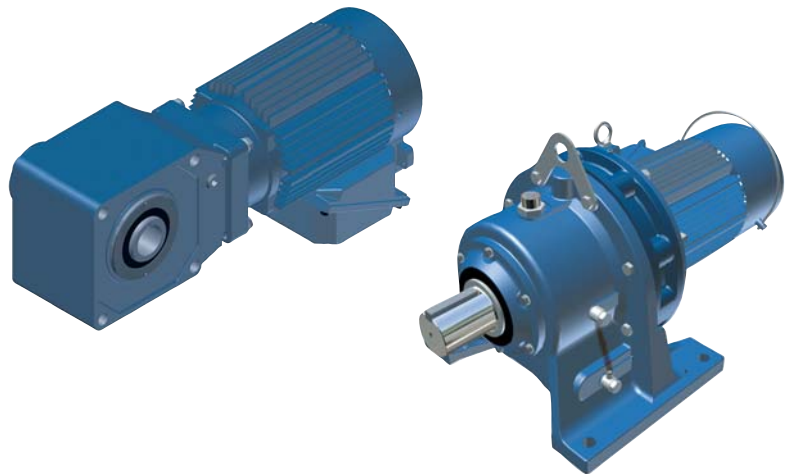
A built-in RFI filter, which meets world standards such as CE, UL and CSA, reduces the harmonic noise generated by the inverter. This filter also increases the inverter's resistance to external noise.

▶ Reliable Protection

Double safety system offers many protective functions and the ability to check detailed information when a fault is detected.

▶ Versatile

Ideal for operating Sumitomo gearmotors.



Nomenclature

HF321

Series Name:
HF-320α Series

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Input Source:
2: 3-Phase 200 - 240V
4: 3-Phase 380 - 480V
S: 1-Phase 200 - 240V

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A20

Motor Output:
A20: 1/4 HP (0.2 kW) 3A7: 5 HP (3.7 kW)
A40: 1/2 HP (0.4 kW) 5A5: 7.5 HP (5.5 kW)
A75: 1 HP (0.75 kW) 7A5: 10 HP (7.5 kW)
1A5: 2 HP (1.5 kW) 011: 15 HP (11 kW)
2A2: 3 HP (2.2 kW) 015: 20HP (15 kW)

3-Phase 200V - 240V

Item		Specification									
Input Voltage Class		3-Phase 200V									
Motor HP (kW)		0.25 (0.2)	0.5 (0.4)	1 (0.75)	2 (1.5)	3 (2.2)	5 (3.7)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)
Rating	Type	HF3212-									
	Motor Output	A20	A40	A75	1A5	2A2	3A7	5A5	7A5	011	015
	Capacity (kVA) ^[1]	0.6	1.3	1.8	3.1	4.2	6.7	10	13	21	25
	Rated Output Current (A) ^[2]	1.6 (1.5)	3.3 (3.3)	5 (4.4)	8 (7.9)	11 (10)	17.5 (16.4)	27.5 (25)	33 (33)	54 (49)	66 (60)
	Output Voltage ^[3]	3-phase 200V to 240V									
	Overload Current Rating	150% - 60 seconds, 200% - 0.5 seconds									
	Voltage Frequency	3-phase 200V to 240V - 50/60 Hz									
Power Supply	Allowable Fluctuation	Voltage +10%, -15% ^[4] , frequency ±5%									
	Protective Method	IP20 enclosed type (JEM1030)									
Cooling Method		Self-cooling				Forced air-cooled					
Color		Munsel 5Y-8/0.5									
Built-in Filter		RFI filter ^[5]									
Environment	Atmosphere	Indoors; maximum altitude: 3,280.84 ft. (1000 m); not exposed to direct sunlight, corrosive or explosive gas, vibration (less than 5.9m/s ²) (10 to 55Hz)									
	Ambient Temperature	-10°C to +50°C (above 40°C, remove the protective seal from the top of the inverter)									
	Storage Temperature	-20°C to +65°C									
	Relative Humidity	20 to 93% (condensation free)									

3-Phase 380V - 480V

Item		Specification									
Input Voltage Class		3-Phase 400V									
Motor HP (kW)		0.5 (0.4)	1 (0.75)	2 (1.5)	3 (2.2)	5 (3.7)	7.5 (5.5)	10 (7.5)	15 (11)	20 (15)	
Rating	Type	HF3214-									
	Motor Output	A40	A75	1A5	2A2	3A7	5A5	7A5	011	015	
	Capacity (kVA) ^[1]	1.1	1.8	3.1	4.2	7.2	11	13	21	25	
	Rated Output Current (A) ^[2]	1.5 (1.5)	2.5 (2.1)	4.1 (3.7)	5.5 (5)	9.5 (8.6)	14.3 (13)	17 (17)	27.7 (25)	33 (30)	
	Output Voltage ^[3]	3-phase 380V to 500V									
	Overload Current Rating	150% - 60 seconds, 200% - 0.5 seconds									
	Voltage Frequency	3-phase 380V - to 500V - 50/60 Hz									
Power Supply	Allowable Fluctuation	Voltage +10%, -15% ^[4] , frequency ±5%									
	Protective Method	IP20 enclosed type (JEM1030)									
Cooling Method		Forced air-cooled									
Color		Munsel 5Y- 8/0.5									
Built-in Filter		High-attenuation EMI filter ^[6]									
Environment	Atmosphere	Indoors; maximum altitude: 3,280.84 ft. (1000 m); not exposed to direct sunlight, corrosive or explosive gas, vibration (less than 5.9m/s ²) (10 to 55Hz)									
	Ambient Temperature	-10°C to +50°C (above 40°C, remove the protective seal from the top of the inverter)									
	Storage Temperature	-20°C to +65°C									
	Relative Humidity	20 to 93% (condensation free)									

Notes:

- [1] Capacity is calculated at 220V for the 200V class and at 440V for the 400V class.
- [2] Indicates rated output current setting when the PWM carrier frequency (parameter F300) is 4kHz or less. When exceeding 4kHz, the rated output current setting is shown in parentheses. When the input power voltage of the 400V class model exceeds 480V, it is necessary to further reduce the setting. The default setting of the PWM carrier frequency is 12 kHz.
- [3] Maximum output voltage is the same as the input voltage.
- [4] ±10% when the inverter is used continuously (load of 100%).
- [5] Built-in standard filter: Core and capacities; With RFI noise filter option: complies EN55011 Class A Group 1 (Max. length of motor connecting cable 16.40 ft. or 5m) and Class B Group 1 (Max. length of motor connecting cable 3.28 ft. or 1m).
- [6] Built-in high-attenuation EMI filter: Complies EN55011 Class A Group 1 (Max. length of motor connecting cable 16.40 ft. or 5m); With RFI noise filter option: complies EN55011 Class B Group 1 (Max. length of motor connecting cable 65.62 ft. or 20m) and Class A Group 1 (Max. length of motor connecting cable 164.04 ft. or 50m).

Dimensions

Tables

3-Phase 200V

Input Voltage	Motor HP (kW)	Inverter Type	Figure	Dimensions (mm)						Approx. Weight (kg)
				W	H	D	W1	H1	H2	
3-phase 200V	0.25 (0.2)	HF3212-A20	A	72	130	120	60	121.5	15	1.1
	0.5 (0.4)	HF3212-A40				130				1.2
	1 (0.75)	HF3212-A75				130				1.2
	2 (1.5)	HF3212-1A5	B	105	130	130	93	121.5	13	1.4
	3 (2.2)	HF3212-2A2				150				2.3
	5 (3.7)	HF3212-3A7	C	140	170	150	126	157	14	2.5
	7.5 (5.5)	HF3212-5A5	D	180	220	170	160	210	19.2	6.2
	10 (7.5)	HF3212-7A5								6.3
	15 (11)	HF3212-011	D*	245	310	190	225	295	19.5	9.8
20 (15)	HF3212-015	9.9								

3-Phase 400V

Input Voltage	Motor HP (kW)	Inverter Type	Figure	Dimensions (mm)						Approx. Weight (kg)
				W	H	D	W1	H1	H2	
3-phase 400V	0.5 (0.4)	HF3214-A40	B	105	130	150	93	121.5	13	1.8
	1 (0.75)	HF3214-A75								1.8
	2 (1.5)	HF3214-1A5								1.9
	3 (2.2)	HF3214-2A2	C	140	170	150	126	157	14	2.7
	5 (3.7)	HF3214-3A7								2.9
	7.5 (5.5)	HF3214-5A5	D	180	220	170	160	210	12	6.3
	10 (7.5)	HF3214-7A5								6.3
	15 (11)	HF3214-011	D*	245	310	190	225	295	19.5	9.8
	20 (15)	HF3214-015								9.8

Note:
* Cooling fans (2) not shown in bottom view.

Symbols

- W: Width
- H: Height
- D: Depth
- W1: Mounting dimension (horizontal)
- H1: Mounting dimension (vertical)
- H2: Height of EMC plate mounting area

Dimensions

Drawings

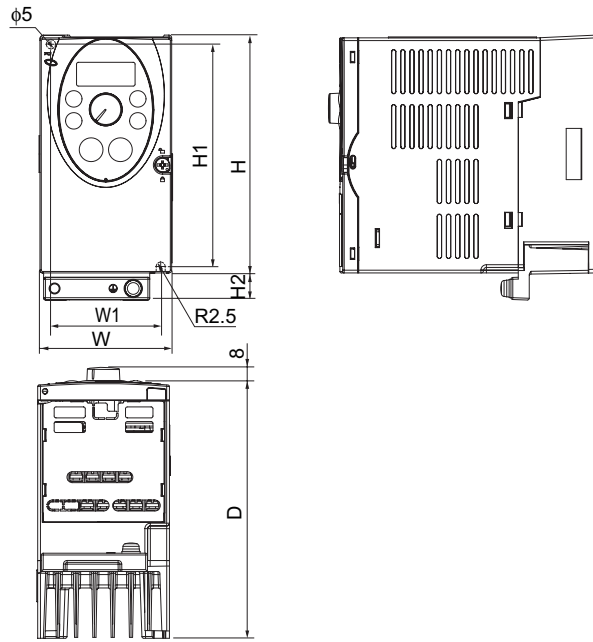


Fig. A

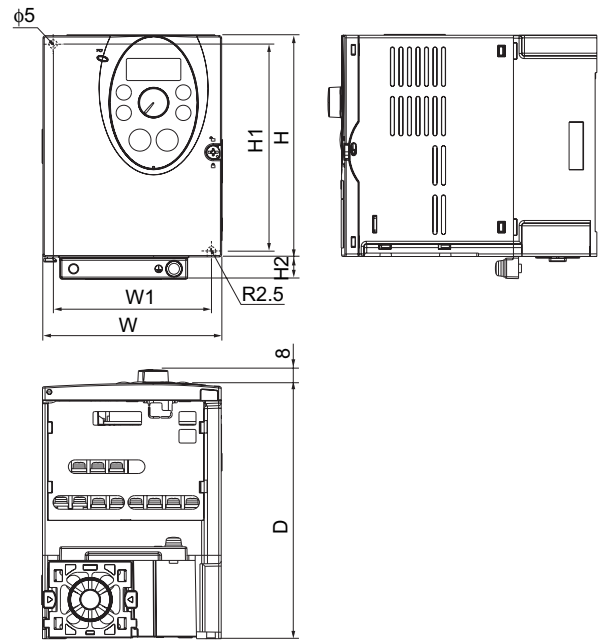


Fig. B

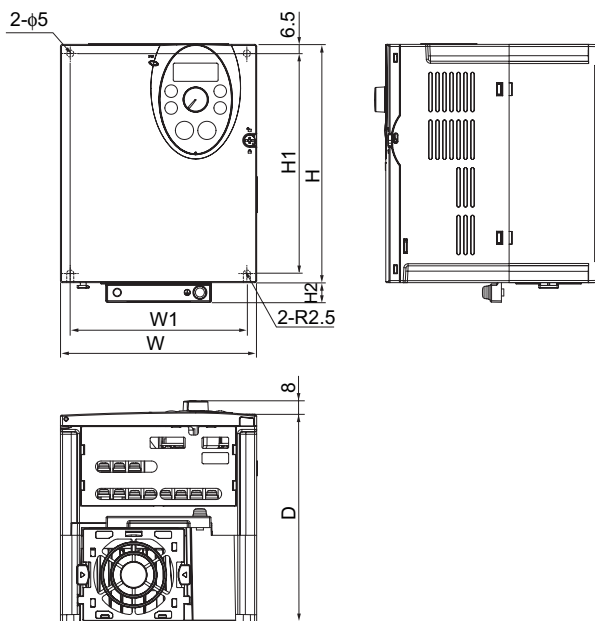


Fig. C

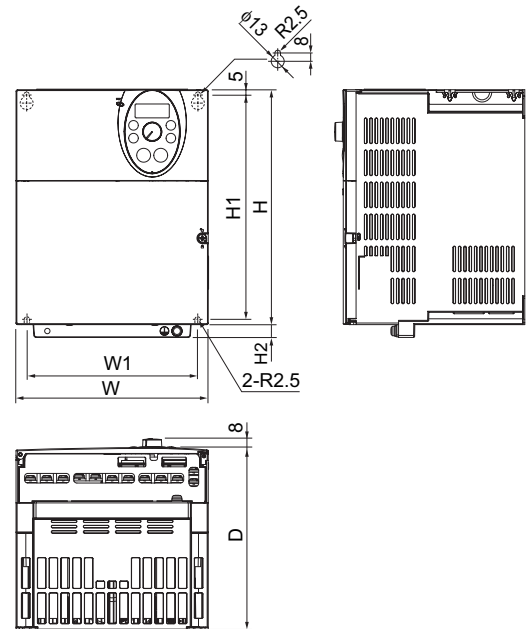


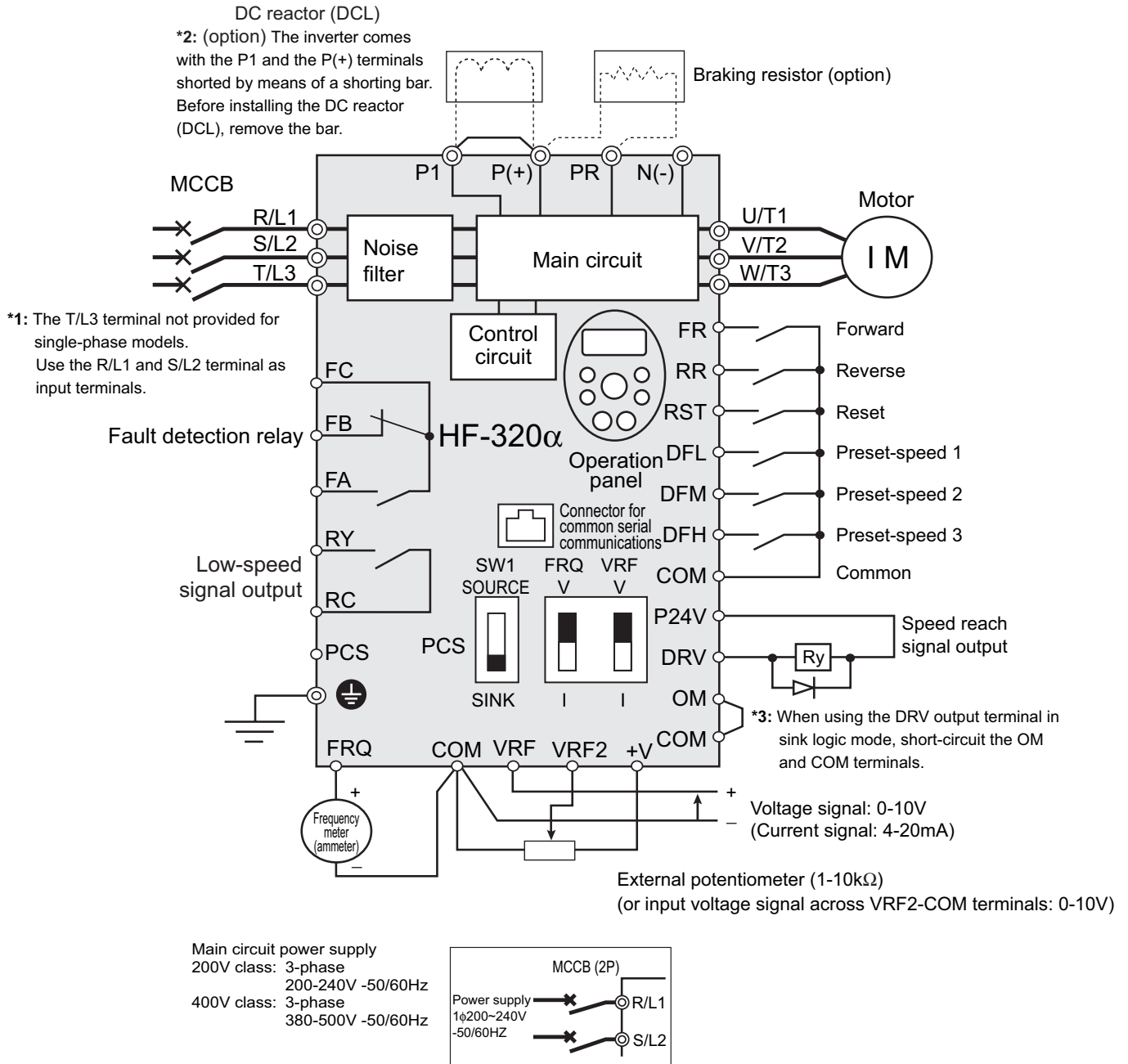
Fig. D

Symbols

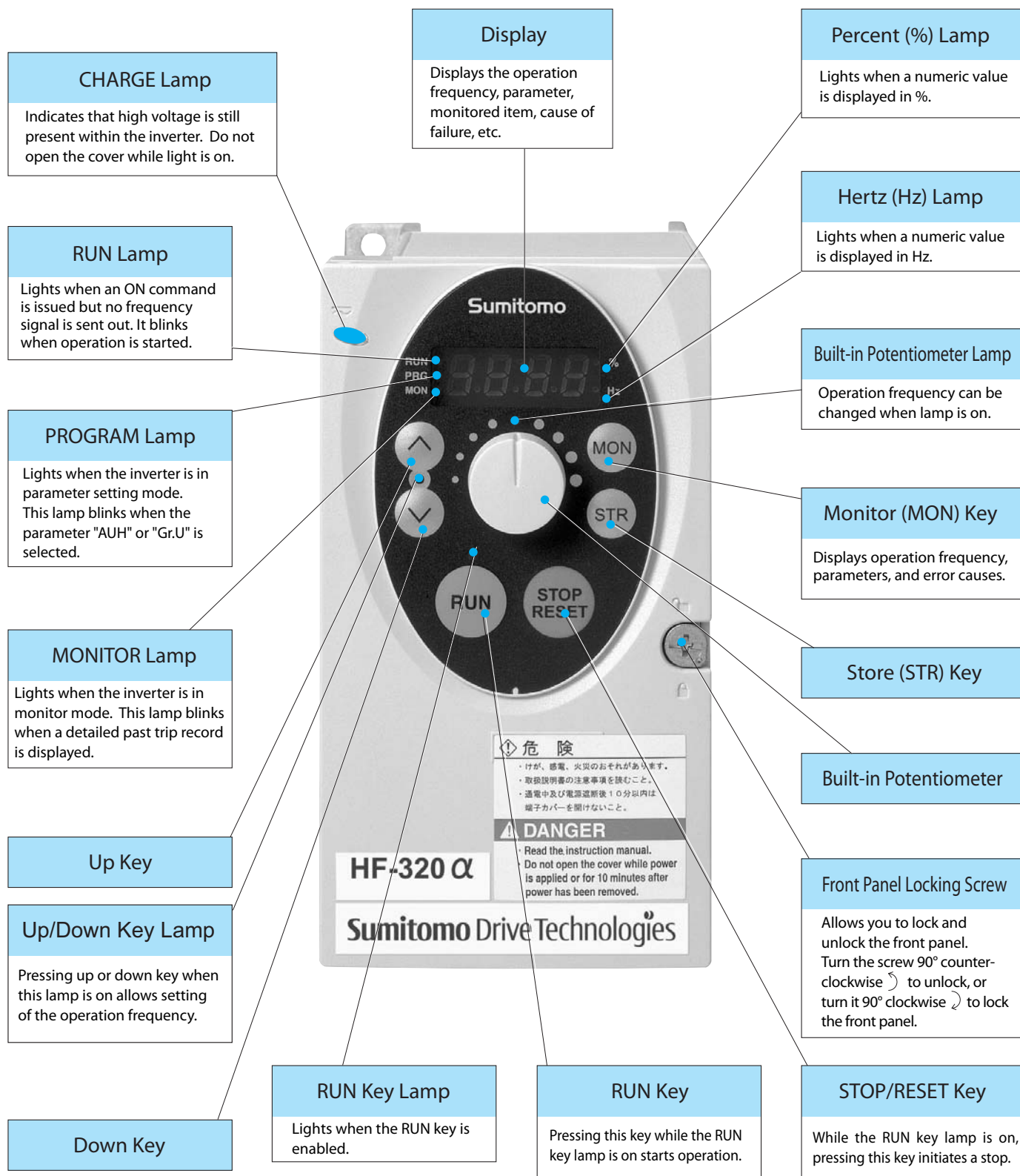
- W: Width
- H: Height
- D: Depth
- W1: Mounting dimension (horizontal)
- H1: Mounting dimension (vertical)
- H2: Height of EMC plate mounting area

Standard Connection Diagram

Sink (Negative) Logic: Common = COM (Refer to Operation Manual for Source (Positive) Logic)



Operation Panel



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