

Standard AC Motors

Constant Speed Motors

High Strength, Long Life, Low Noise

V Series

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

V Series

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RoHS RoHS-Compliant

High Strength, Long Life, Low Noise

V Series

Induction Motors/Reversible Motors/Electromagnetic Brake Motors

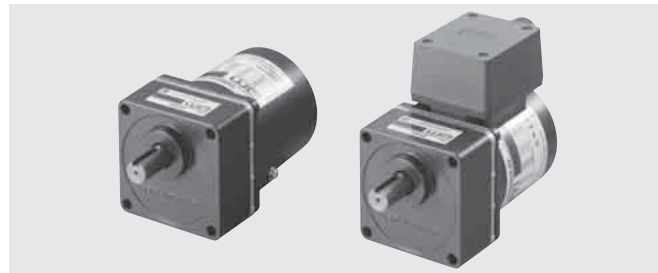
● Additional Information ●
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Our **V** Series provides a set of standard AC motors that maintain the utility of the World **K** Series while offering quieter operation, greater strength, longer life and improved reliability, thereby meeting increasingly specialized customer needs.

If you want to drive larger loads without changing the motor size, or if you're looking for a quieter motor that can be used in a quiet environment such as a hospital or library, you're sure to find it in the **V** Series.



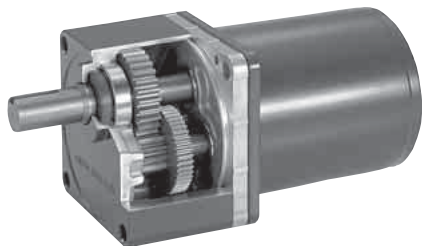
● List of safety standard approved products (Model, Standards, File No., Certification body)
→ Page G-11



Features

● High Strength, Long Life

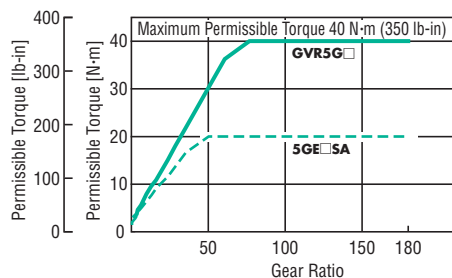
The motor's considerable strength has resulted from the use of a rigid case, a proprietary side-panel construction and an optimized gear design. Moreover, the use of a larger-diameter bearing serves to extend its useful life.



◇ Maximum Permissible Torque: The Highest in Class

The gearhead for the **GVR** type, designed for 90 W (1/8 HP) applications, achieves a maximum permissible torque of 40 N·m (350 lb-in), which is the highest in the class of motors with a frame size of □90 mm (□3.54 in.). Its high-strength design allows the **GVR** to produce this amazing torque, which is twice the permissible torque of the **GE** type's gearhead.

With the **V** Series, you need not increase the size of the motor or gearhead in the situation where a gearhead of higher strength becomes necessary due to changes of the load conditions.



◇ Long Rated Life of 10000 Hours

The **V** Series achieves a long rated life of 10000 hours, providing the maximum permissible torque of approximately twice as large as that of the **GN** type or **GE** type gearhead.

This results in a considerable savings in time and effort with regard to maintenance.

● Quiet Operation

The **V** Series utilizes a comprehensive set of noise-reduction technologies: a special tooth-surface machining technology to remove cutting marks of 1 to 2 μm from the surface of the motor shaft teeth, an optimized quiet-running design that considers the circular speed of the motor while maintaining its strength, and a high-accuracy assembly-technology that ensures precision at micron levels.

Note:

● The reversible motors and electromagnetic brake motors may generate sliding noises due to the brake mechanism.

● Combination Type for Easy Installation

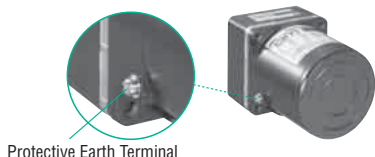
The motor and gearhead are pre-assembled with dedicated screws, so installation is easy. There's no need to worry about the shaft being scratched. Motors and gearheads are also available separately to facilitate repairs.

● **Conforms to Major Safety Standards and Global Power Supply Voltages**

The **V** Series is recognized by UL and CSA, and certified under the China Compulsory Certification System (CCC System). CE Marking is used in accordance with the Low Voltage Directive. Also, our wide range of products includes those that meet the power supply voltages of major countries in Asia, North America and Europe.

● **High Reliability**

The motors have a built-in overheat protection device and a protective earth terminal. Offering high reliability, the **V** Series supports effective equipment design.



● **RoHS** RoHS-Compliant

The **V** Series conforms to the RoHS Directive that prohibits the use of six chemical substances including lead and cadmium.

● Details of RoHS Directive → Page G-38

■ **Types of Motor**

● Induction Motors, Reversible Motors

● Electromagnetic Brake Motors



Lead Wire Type



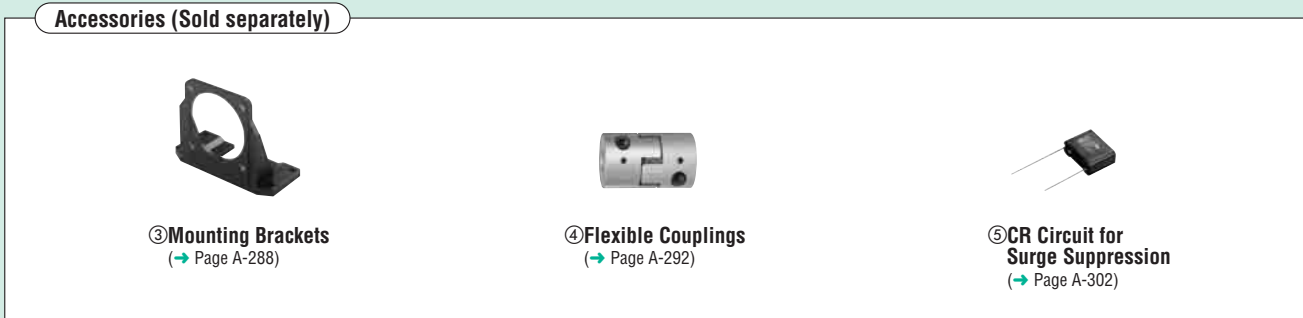
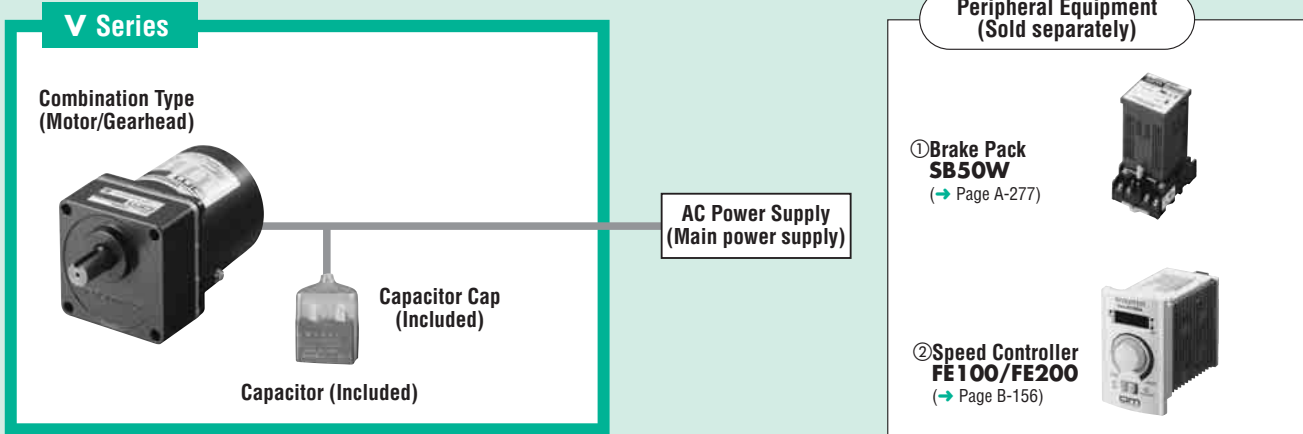
Terminal Box Type



Lead Wire Type

Type		Output Power	Features
Induction Motors	Lead Wire Type	6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	Induction motors are optimal for uni-directional continuous operation such as a conveyor system.
	Terminal Box Type	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	
Reversible Motors	Lead Wire Type	6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	Reversible motors permit instantaneous switching of rotation direction. Most suitable for applications where instantaneous reversal of direction is frequently required.
	Terminal Box Type	25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	
Electromagnetic Brake Motors		6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP)	These motors adopt a power off activated type electromagnetic brake. Since the electromagnetic brakes exert holding power even while the power is off, they are highly suitable for use as emergency brakes.

System Configuration



No.	Product Name	Overview	Page
①	Brake Pack	Use this brake pack to stop the motor instantaneously, perform bi-directional operation, and more.	A-277
②	Speed Controller	Combine this speed controller with a three-phase motor for easy speed control. Equipped with a digital display.	B-156
③	Mounting Brackets	Dedicated mounting bracket for the motor and gearhead.	A-288
④	Flexible Couplings	Clamp type coupling that connects the motor or gearhead shaft to the driven shaft.	A-292
⑤	CR Circuit for Surge Suppression	Used to protect relay and switch contacts (EPCR1201-2).	A-302

● Example of System Configuration

(Sold separately)

V Series Combination Type VH1425A2-100U	+	Brake Pack SB50W	Mounting Bracket SOL4M6	Flexible Coupling MCL4015F10
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● The system configuration shown above is an example. Other combinations are available. Motors and gearheads are also available separately.

Product Number Code

Combination Type

V H R 5 40 A 2 M-100 U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series	V: V Series
②	H: High Power	
③	Motor Type	I: Induction Motor R: Reversible Motor
④	Motor Frame Size	2: 60 mm (2.36 in.) 3: 70 mm (2.76 in.) 4: 80 mm (3.15 in.) 5: 90 mm (3.54 in.)
⑤	Output Power (W)	(Example) 40: 40 W (1/19 HP)
⑥	Power Supply Voltage	A: Single-Phase 110/115 VAC C: Single-Phase 220/230 VAC S: Three-Phase 200/220/230 VAC
⑦	2, 3: RoHS-Compliant	
⑧	M: Power Off Activated Type Electromagnetic Brake T: Terminal Box Type	
⑨	Gear Ratio of Combination Type	(Example) 100: Gear Ratio of 100:1
⑩	Included Capacitor	U: For Single-Phase 110/115 VAC E: For Single-Phase 220/230 VAC Blank: Three-Phase Type

The following items are included in each product.

Motor, Gearhead, Capacitor*, Capacitor Cap*, Mounting Screws, Parallel Key, Operating Manual
*Only for single-phase motors

Motor

V H R 5 40 A 2 M-GVH U

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

①	Series	V: V Series
②	H: High Power	
③	Motor Type	I: Induction Motor R: Reversible Motor
④	Motor Frame Size	2: 60 mm (2.36 in.) 3: 70 mm (2.76 in.) 4: 80 mm (3.15 in.) 5: 90 mm (3.54 in.)
⑤	Output Power (W)	(Example) 40: 40 W (1/19 HP)
⑥	Power Supply Voltage	A: Single-Phase 110/115 VAC C: Single-Phase 220/230 VAC S: Three-Phase 200/220/230 VAC
⑦	2, 3: RoHS-Compliant	
⑧	M: Power Off Activated Type Electromagnetic Brake T: Terminal Box Type	
⑨	Motor Shaft Type	GV: GV Type Pinion Shaft GVH: GVH Type Pinion Shaft GVR: GVR Type Pinion Shaft
⑩	Included Capacitor	U: For Single-Phase 110/115 VAC E: For Single-Phase 220/230 VAC Blank: Three-Phase Type

The following items are included in each product.

Motor, Capacitor*, Capacitor Cap*, Operating Manual
*Only for single-phase motors

● The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate.

When the motor is approved under various safety standards, the model name on the nameplate is the approved model name. → Page G-11

(Example) Model: **VHR540A2M-GVHU** → Motor nameplate and product approved under various safety standards: **VHR540A2M-GVH**

Gearhead

GVH 5G 50

① ② ③

①	Type of Pinion	GV: GV Type Pinion, RoHS-Compliant GVH: GVH Type Pinion, RoHS-Compliant GVR: GVR Type Pinion, RoHS-Compliant
②	Gearhead Frame Size	2: 60 mm (2.36 in.) 3: 70 mm (2.76 in.) 4: 80 mm (3.15 in.) 5: 90 mm (3.54 in.)
③	Gear Ratio	(Example) 50: Gear Ratio of 50:1

The following items are included in each product.

Gearhead, Mounting Screws, Parallel Key, Operating Manual

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Reversible Motors

Electromagnetic Brake Motors

V Series

Clutch & Brake Motors

Synchronous Motors

Low-Speed Synchronous Motors

Watertight, Dust-Resistant Motors

Torque Motors

Right-Angle Gearheads

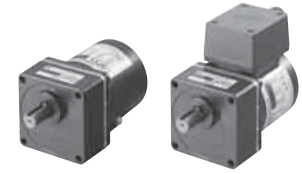
Linear Heads

Brake Pack

Accessories

Installation

High Strength, Long Life, Low Noise V Series Induction Motors, Reversible Motors



Product Line

● Induction Motors Combination Type [6 W (1/125 HP) to 25 W (1/30 HP)] (RoHS)

Type	Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	VHI206A2-□U	VHI315A2-□U	VHI425A2-□U	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360
	Single-Phase 220/230 VAC	VHI206C2-□E	VHI315C2-□E	VHI425C2-□E	
	Three-Phase 200/220/230 VAC	—	—	VHI425S2-□	
Terminal Box Type	Single-Phase 110/115 VAC	—	—	VHI425A2T-□U	
	Single-Phase 220/230 VAC	—	—	VHI425C2T-□E	
	Three-Phase 200/220/230 VAC	—	—	VHI425S2T-□	

● Enter the gear ratio in the box (□) within the model name.

● Induction Motors Combination Type [40 W (1/19 HP) to 90 W (1/8 HP)] (RoHS)

Type	Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	VHI540A2-□U	VHI560A2-□U	VHI590A2-□U	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250*, 300*
	Single-Phase 220/230 VAC	VHI540C2-□E	VHI560C2-□E	VHI590C2-□E	
	Three-Phase 200/220/230 VAC	VHI540S2-□	VHI560S2-□	VHI590S2-□	
Terminal Box Type	Single-Phase 110/115 VAC	VHI540A2T-□U	VHI560A2T-□U	VHI590A2T-□U	
	Single-Phase 220/230 VAC	VHI540C2T-□E	VHI560C2T-□E	VHI590C2T-□E	
	Three-Phase 200/220/230 VAC	VHI540S2T-□	VHI560S2T-□	VHI590S2T-□	

* Except for 90 W (1/8 HP) type.

● Enter the gear ratio in the box (□) within the model name.

● Induction Motors Motor/Gearhead (RoHS)

● Motor specifications, motor dimensions and gearhead dimensions are the same as those of the combination type.

◇ Motor [6 W (1/125 HP) to 25 W (1/30 HP)]

Type	Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	VHI206A2-GVU	VHI315A2-GVU	VHI425A2-GVU
	Single-Phase 220/230 VAC	VHI206C2-GVE	VHI315C2-GVE	VHI425C2-GVE
	Three-Phase 200/220/230 VAC	—	—	VHI425S2-GV
Terminal Box Type	Single-Phase 110/115 VAC	—	—	VHI425A2T-GVU
	Single-Phase 220/230 VAC	—	—	VHI425C2T-GVE
	Three-Phase 200/220/230 VAC	—	—	VHI425S2T-GV

◇ Motor [40 W (1/19 HP) to 90 W (1/8 HP)]

Type	Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	VHI540A2-GVHU	VHI560A2-GVHU	VHI590A2-GVRU
	Single-Phase 220/230 VAC	VHI540C2-GVHE	VHI560C2-GVHE	VHI590C2-GVRE
	Three-Phase 200/220/230 VAC	VHI540S2-GVH	VHI560S2-GVH	VHI590S2-GVR
Terminal Box Type	Single-Phase 110/115 VAC	VHI540A2T-GVHU	VHI560A2T-GVHU	VHI590A2T-GVRU
	Single-Phase 220/230 VAC	VHI540C2T-GVHE	VHI560C2T-GVHE	VHI590C2T-GVRE
	Three-Phase 200/220/230 VAC	VHI540S2T-GVH	VHI560S2T-GVH	VHI590S2T-GVR

◇ Gearhead

Output Power of Applicable Motor	Model	Gear Ratio
6 W (1/125 HP)	GV2G□	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360
15 W (1/50 HP)	GV3G□	
25 W (1/30 HP)	GV4G□	
40 W (1/19 HP)	GVH5G□	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300
60 W (1/12 HP)		
90 W (1/8 HP)	GVR5G□	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

● Enter the gear ratio in the box (□) within the model name.

● Reversible Motors Combination Type [6 W (1/125 HP) to 25 W (1/30 HP)] (RoHS)

Type	Power Supply Voltage	<input type="checkbox"/> 60 mm (2.36 in.) 6 W (1/125 HP)	<input type="checkbox"/> 70 mm (2.76 in.) 15 W (1/50 HP)	<input type="checkbox"/> 80 mm (3.15 in.) 25 W (1/30 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	VHR206A2-<input type="checkbox"/>U	VHR315A2-<input type="checkbox"/>U	VHR425A2-<input type="checkbox"/>U	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360
	Single-Phase 220/230 VAC	VHR206C2-<input type="checkbox"/>E	VHR315C2-<input type="checkbox"/>E	VHR425C2-<input type="checkbox"/>E	
Terminal Box Type	Single-Phase 110/115 VAC	–	–	VHR425A2T-<input type="checkbox"/>U	
	Single-Phase 220/230 VAC	–	–	VHR425C2T-<input type="checkbox"/>E	

● Enter the gear ratio in the box () within the model name.

● Reversible Motors Combination Type [40 W (1/19 HP) to 90 W (1/8 HP)] (RoHS)

Type	Power Supply Voltage	<input type="checkbox"/> 90 mm (3.54 in.) 40 W (1/19 HP)	<input type="checkbox"/> 90 mm (3.54 in.) 60 W (1/12 HP)	<input type="checkbox"/> 90 mm (3.54 in.) 90 W (1/8 HP)	Gear Ratio
		Model	Model	Model	
Lead Wire Type	Single-Phase 110/115 VAC	VHR540A2-<input type="checkbox"/>U	VHR560A2-<input type="checkbox"/>U	VHR590A2-<input type="checkbox"/>U	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250*, 300*
	Single-Phase 220/230 VAC	VHR540C2-<input type="checkbox"/>E	VHR560C2-<input type="checkbox"/>E	VHR590C3-<input type="checkbox"/>E	
Terminal Box Type	Single-Phase 110/115 VAC	VHR540A2T-<input type="checkbox"/>U	VHR560A2T-<input type="checkbox"/>U	VHR590A2T-<input type="checkbox"/>U	
	Single-Phase 220/230 VAC	VHR540C2T-<input type="checkbox"/>E	VHR560C2T-<input type="checkbox"/>E	VHR590C3T-<input type="checkbox"/>E	

* Except for 90 W (1/8 HP) type.

● Enter the gear ratio in the box () within the model name.

● Reversible Motors Motor/Gearhead (RoHS)

● Motor specifications, motor dimensions and gearhead dimensions are the same as those of the combination type.

◇ Motor [6 W (1/125 HP) to 25 W (1/30 HP)]

Type	Power Supply Voltage	<input type="checkbox"/> 60 mm (2.36 in.) 6 W (1/125 HP)	<input type="checkbox"/> 70 mm (2.76 in.) 15 W (1/50 HP)	<input type="checkbox"/> 80 mm (3.15 in.) 25 W (1/30 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	VHR206A2-GVU	VHR315A2-GVU	VHR425A2-GVU
	Single-Phase 220/230 VAC	VHR206C2-GVE	VHR315C2-GVE	VHR425C2-GVE
Terminal Box Type	Single-Phase 110/115 VAC	–	–	VHR425A2T-GVU
	Single-Phase 220/230 VAC	–	–	VHR425C2T-GVE

◇ Motor [40 W (1/19 HP) to 90 W (1/8 HP)]

Type	Power Supply Voltage	<input type="checkbox"/> 90 mm (3.54 in.) 40 W (1/19 HP)	<input type="checkbox"/> 90 mm (3.54 in.) 60 W (1/12 HP)	<input type="checkbox"/> 90 mm (3.54 in.) 90 W (1/8 HP)
		Model	Model	Model
Lead Wire Type	Single-Phase 110/115 VAC	VHR540A2-GVHU	VHR560A2-GVHU	VHR590A2-GVRU
	Single-Phase 220/230 VAC	VHR540C2-GVHE	VHR560C2-GVHE	VHR590C3-GVRE
Terminal Box Type	Single-Phase 110/115 VAC	VHR540A2T-GVHU	VHR560A2T-GVHU	VHR590A2T-GVRU
	Single-Phase 220/230 VAC	VHR540C2T-GVHE	VHR560C2T-GVHE	VHR590C3T-GVRE

◇ Gearhead

Output Power of Applicable Motor	Model	Gear Ratio
6 W (1/125 HP)	GV2G<input type="checkbox"/>	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360
15 W (1/50 HP)	GV3G<input type="checkbox"/>	
25 W (1/30 HP)	GV4G<input type="checkbox"/>	
40 W (1/19 HP)	GVH5G<input type="checkbox"/>	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300
60 W (1/12 HP)		
90 W (1/8 HP)	GVR5G<input type="checkbox"/>	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

● Enter the gear ratio in the box () within the model name.

Specifications

● Induction Motors – Continuous Rating (RoHS)



Model/Type		Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m (oz-in)	Rated Torque mN·m (oz-in)	Rated Speed r/min	Capacitor μF
Lead Wire Type	Terminal Box Type								
Ⓜ ZP	VHI206A2-□U	6 (1/125)	Single-Phase 110	60	0.188	40 (5.6)	41 (5.8)	1450	2.5
			Single-Phase 115	60	0.194	40 (5.6)	41 (5.8)	1450	
Ⓜ ZP	VHI206C2-□E	5.5 (1/136)	Single-Phase 220	50	0.106	38 (5.3)	46 (6.5)	1150	0.6
			Single-Phase 230	60	0.099	40 (5.6)	41 (5.8)	1450	
		6 (1/125)	50	0.111	45 (6.3)	49 (6.9)	1150		
			60	0.100	40 (5.6)	41 (5.8)	1450		
Ⓜ TP	VHI315A2-□U	15 (1/50)	Single-Phase 110	60	0.33	65 (9.2)	105 (14.9)	1450	4.5
			Single-Phase 115	60	0.34	65 (9.2)	105 (14.9)	1450	
Ⓜ TP	VHI315C2-□E	15 (1/50)	Single-Phase 220	50	0.19	70 (9.9)	125 (17.7)	1200	1.0
			Single-Phase 230	60	0.16	65 (9.2)	105 (14.9)	1450	
			50	0.19	75 (10.6)	125 (17.7)	1200		
Ⓜ TP	VHI425A2-□U	25 (1/30)	Single-Phase 110	60	0.46	120 (17.0)	170 (24)	1450	6.5
			Single-Phase 115	60	0.46	120 (17.0)	170 (24)	1450	
Ⓜ TP	VHI425C2-□E	25 (1/30)	Single-Phase 220	50	0.27	110 (15.6)	205 (29)	1200	1.5
			Single-Phase 230	60	0.23	110 (15.6)	170 (24)	1450	
			50	0.27	120 (17.0)	205 (29)	1200		
			60	0.23	120 (17.0)	170 (24)	1450		
Ⓜ TP	VHI425S2-□	25 (1/30)	Three-Phase 200	50	0.23	240 (34)	190 (26)	1300	-
			Three-Phase 220	60	0.21	160 (22)	160 (22)	1600	
			Three-Phase 230	60	0.22	160 (22)	160 (22)	1600	
Ⓜ TP	VHI540A2-□U	40 (1/19)	Single-Phase 110	60	0.68	200 (28)	260 (36)	1500	9.0
			Single-Phase 115	60	0.67	200 (28)	260 (36)	1500	
Ⓜ TP	VHI540C2-□E	40 (1/19)	Single-Phase 220	50	0.39	200 (28)	315 (44)	1250	2.3
			Single-Phase 230	60	0.35	200 (28)	260 (36)	1500	
			50	0.39	200 (28)	300 (42)	1300		
			60	0.34	200 (28)	260 (36)	1500		
Ⓜ TP	VHI540S2-□	40 (1/19)	Three-Phase 200	50	0.32	400 (56)	300 (42)	1300	-
			Three-Phase 220	60	0.30	260 (36)	260 (36)	1550	
			Three-Phase 230	60	0.30	260 (36)	260 (36)	1600	
Ⓜ TP	VHI560A2-□U	60 (1/12)	Single-Phase 110	60	1.09	320 (45)	405 (57)	1450	18
			Single-Phase 115	60	1.10	320 (45)	405 (57)	1450	
Ⓜ TP	VHI560C2-□E	60 (1/12)	Single-Phase 220	50	0.55	320 (45)	490 (69)	1200	4.0
			Single-Phase 230	60	0.54	320 (45)	405 (57)	1450	
			50	0.57	320 (45)	490 (69)	1200		
			60	0.54	320 (45)	405 (57)	1450		
Ⓜ TP	VHI560S2-□	60 (1/12)	Three-Phase 200	50	0.50	600 (85)	450 (63)	1300	-
			Three-Phase 220	60	0.43	500 (71)	380 (53)	1550	
			Three-Phase 230	60	0.45	500 (71)	380 (53)	1600	
Ⓜ TP	VHI590A2-□U	90 (1/8)	Single-Phase 110	60	1.56	450 (63)	585 (83)	1500	25
			Single-Phase 115	60	1.55	450 (63)	585 (83)	1500	
Ⓜ TP	VHI590C2-□E	90 (1/8)	Single-Phase 220	50	0.74	450 (63)	730 (103)	1200	6.0
			Single-Phase 230	60	0.82	450 (63)	605 (85)	1450	
			50	0.76	450 (63)	730 (103)	1200		
			60	0.81	450 (63)	605 (85)	1450		
Ⓜ TP	VHI590S2-□	90 (1/8)	Three-Phase 200	50	0.64	850 (120)	680 (96)	1300	-
			Three-Phase 220	60	0.59	700 (99)	570 (80)	1550	
			Three-Phase 230	60	0.60	700 (99)	570 (80)	1600	

Ⓜ **ZP**: Impedance protected

Ⓜ **TP**: Contains a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

● Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.

● The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.



● Reversible Motors – 30 Minute Rating (RoHS)

Model/Type		Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN·m (oz·in)	Rated Torque mN·m (oz·in)	Rated Speed r/min	Capacitor μF
Lead Wire Type	Terminal Box Type								
Ⓜ VHR206A2-□U	-	6 (1/125)	Single-Phase 110	60	0.251	45 (6.3)	41 (5.8)	1450	3.5
			Single-Phase 115	60	0.256	45 (6.3)	41 (5.8)	1450	
Ⓜ VHR206C2-□E	-	6 (1/125)	Single-Phase 220	50	0.120	45 (6.3)	49 (6.9)	1150	0.8
			Single-Phase 220	60	0.125	45 (6.3)	41 (5.8)	1450	
				50	0.122	50 (7.1)	49 (6.9)	1200	
			Single-Phase 230	60	0.127	45 (6.3)	41 (5.8)	1450	
Ⓜ VHR315A2-□U	-	15 (1/50)	Single-Phase 110	60	0.41	100 (14.2)	105 (14.9)	1450	6.0
			Single-Phase 115	60	0.41	100 (14.2)	105 (14.9)	1450	
Ⓜ VHR315C2-□E	-	15 (1/50)	Single-Phase 220	50	0.20	100 (14.2)	125 (17.7)	1200	1.5
			Single-Phase 220	60	0.21	100 (14.2)	105 (14.9)	1450	
				50	0.20	100 (14.2)	125 (17.7)	1200	
			Single-Phase 230	60	0.21	100 (14.2)	105 (14.9)	1450	
Ⓜ VHR425A2-□U	VHR425A2T-□U	25 (1/30)	Single-Phase 110	60	0.56	140 (19.8)	170 (24)	1450	8.0
			Single-Phase 115	60	0.56	140 (19.8)	170 (24)	1450	
Ⓜ VHR425C2-□E	VHR425C2T-□E	25 (1/30)	Single-Phase 220	50	0.29	140 (19.8)	205 (29)	1200	2.5
			Single-Phase 220	60	0.35	140 (19.8)	170 (24)	1450	
				50	0.30	160 (22)	205 (29)	1200	
			Single-Phase 230	60	0.35	140 (19.8)	170 (24)	1450	
Ⓜ VHR540A2-□U	VHR540A2T-□U	40 (1/19)	Single-Phase 110	60	0.88	260 (36)	270 (38)	1450	12
			Single-Phase 115	60	0.87	260 (36)	270 (38)	1450	
Ⓜ VHR540C2-□E	VHR540C2T-□E	40 (1/19)	Single-Phase 220	50	0.43	270 (38)	315 (44)	1250	3.5
			Single-Phase 220	60	0.48	260 (36)	260 (36)	1500	
				50	0.43	270 (38)	315 (44)	1250	
			Single-Phase 230	60	0.48	260 (36)	260 (36)	1500	
Ⓜ VHR560A2-□U	VHR560A2T-□U	60 (1/12)	Single-Phase 110	60	1.27	380 (53)	405 (57)	1450	20
			Single-Phase 115	60	1.27	380 (53)	405 (57)	1450	
Ⓜ VHR560C2-□E	VHR560C2T-□E	60 (1/12)	Single-Phase 220	50	0.61	420 (59)	490 (69)	1200	5.0
			Single-Phase 220	60	0.67	380 (53)	405 (57)	1450	
				50	0.63	470 (66)	490 (69)	1200	
			Single-Phase 230	60	0.66	380 (53)	405 (57)	1450	
Ⓜ VHR590A2-□U	VHR590A2T-□U	90 (1/8)	Single-Phase 110	60	1.87	590 (83)	585 (83)	1500	30
			Single-Phase 115	60	1.86	590 (83)	585 (83)	1500	
Ⓜ VHR590C3-□E	VHR590C3T-□E	90 (1/8)	Single-Phase 220	50	0.83	600 (85)	730 (103)	1200	7.0
			Single-Phase 220	60	0.96	590 (83)	605 (85)	1450	
				50	0.83	600 (85)	730 (103)	1200	
			Single-Phase 230	60	0.95	590 (83)	605 (85)	1450	

Ⓜ: Impedance protected

Ⓜ: Contains a built-in thermal protector (automatic return type). If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

- Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.
- The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.
- Values shown for rated torque and starting torque are measured for operation without the friction brake installed.

■ General Specifications

● Induction Motors, Reversible Motors

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings is 80°C (144°F) or less [three-phase type: 70°C (126°F) or less] measured by the resistance change method after rated operation under normal ambient temperature and humidity. For the VHR590C type, a heat radiation plate that is 200×200 mm (7.87×7.87 in.) with a thickness of 5 mm (0.20 in.) is necessary.
Insulation Class	Class B [130°C (266°F)]
Overheat Protection	6 W (1/125 HP) type has impedance protection. All others have built-in thermal protector (automatic return type). Open: 130±5°C (266±9°F), Close: 82±15°C (179.6±27°F)
Ambient Temperature	Three-phase 200 VAC: -10~+50°C (+14~+122°F) (non-freezing) Single-phase 110/115 VAC, Single-phase 220/230 VAC, Three-phase 220/230 VAC: -10~+40°C (+14~+104°F) (non-freezing)
Ambient Humidity	85% or less (non-condensing)
Degree of Protection	Lead wire type: IP20 Terminal box type: VHI425 , VHI540 , VHI560 , VHI590 type IP54 VHR425 , VHR540 , VHR560 , VHR590 type IP40

Gearmotor – Torque Table

● Induction Motors 50 Hz

Unit = N·m (lb·in)

Model Combination Type	Speed r/min Gear Ratio	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	6	5	4.2
		5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
VHI206C2-□E (230 VAC)		0.22 (1.94)	0.26 (2.3)	0.33 (2.9)	0.40 (3.5)	0.55 (4.8)	0.66 (5.8)	0.79 (6.9)	1.1 (9.7)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.5 (22)	3.2 (28)	3.8 (33)	4.2 (37)	5.1 (45)	6 (53)	6 (53)	6 (53)	6 (53)	6 (53)
VHI206C2-□E (220 VAC)		0.21 (1.85)	0.25 (2.2)	0.31 (2.7)	0.37 (3.2)	0.52 (4.6)	0.62 (5.4)	0.75 (6.6)	1.0 (8.8)	1.2 (10.6)	1.4 (12.3)	2.0 (17.7)	2.4 (21)	3.0 (26)	3.6 (31)	4.0 (35)	4.7 (41)	5.6 (49)	6 (53)	6 (53)	6 (53)	6 (53)
VHI315C2-□E		0.56 (4.9)	0.68 (6.0)	0.84 (7.4)	1.0 (8.8)	1.4 (12.3)	1.7 (15.0)	2.0 (17.7)	2.8 (24)	3.2 (28)	3.9 (34)	5.4 (47)	6.5 (57)	8.1 (71)	9.7 (85)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
VHI425C2-□E, VHI425C2T-□E		0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.7 (15.0)	2.3 (20)	2.8 (24)	3.3 (29)	4.6 (40)	5.3 (46)	6.3 (55)	8.8 (77)	10.6 (93)	13.2 (116)	15.9 (140)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI425S2-□, VHI425S2T-□		0.86 (7.6)	1.0 (8.8)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	4.9 (43)	5.9 (52)	8.2 (72)	9.8 (86)	12.3 (108)	14.7 (130)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI540C2-□E, VHI540C2T-□E (220 VAC)		1.4 (12.3)	1.7 (15.0)	2.1 (18.5)	2.6 (23)	3.5 (30)	4.3 (38)	5.1 (45)	6.8 (60)	8.1 (71)	9.8 (86)	13.5 (119)	16.3 (144)	20.3 (179)	24.4 (210)	27.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI540C2-□E, VHI540C2T-□E (230 VAC)		1.4 (12.3)	1.6 (14.1)	2.0 (17.7)	2.4 (21)	3.4 (30)	4.1 (36)	4.9 (43)	6.5 (57)	7.7 (68)	9.3 (82)	12.9 (114)	15.5 (137)	19.4 (171)	23.2 (200)	25.8 (220)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI540S2-□, VHI540S2T-□		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI560C2-□E, VHI560C2T-□E		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI560S2-□, VHI560S2T-□		2.0 (17.7)	2.4 (21)	3.0 (26)	3.6 (31)	5.1 (45)	6.1 (53)	7.3 (64)	9.7 (85)	11.6 (102)	13.9 (123)	19.4 (171)	23.2 (200)	29.0 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI590C2-□E, VHI590C2T-□E		3.3 (29)	3.9 (34)	4.9 (43)	5.9 (52)	8.2 (72)	9.9 (87)	11.3 (100)	15.7 (138)	18.8 (166)	22.6 (200)	31.4 (270)	37.7 (330)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
VHI590S2-□, VHI590S2T-□		3.1 (27)	3.7 (32)	4.6 (40)	5.5 (48)	7.7 (68)	9.2 (81)	10.5 (92)	14.6 (129)	17.5 (154)	21.1 (186)	29.2 (250)	35.1 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2–20% less than the displayed value, depending on the load.

● Induction Motors 60 Hz

Unit = N·m (lb·in)

Model Combination Type	Speed r/min Gear Ratio	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
		5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
VHI206A2-□U, VHI206C2-□E		0.18 (1.59)	0.22 (1.94)	0.28 (2.4)	0.33 (2.9)	0.46 (4.0)	0.55 (4.8)	0.66 (5.8)	0.92 (8.1)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.1 (18.5)	2.6 (23)	3.2 (28)	3.5 (30)	4.2 (37)	5.0 (44)	6 (53)	6 (53)	6 (53)	6 (53)
VHI315A2-□U, VHI315C2-□E		0.47 (4.1)	0.57 (5.0)	0.71 (6.2)	0.85 (7.5)	1.2 (10.6)	1.4 (12.3)	1.7 (15.0)	2.4 (21)	2.7 (23)	3.3 (29)	4.5 (39)	5.4 (47)	6.8 (60)	8.1 (71)	9.0 (79)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
VHI425A2-□U, VHI425A2T-□U VHI425C2-□E, VHI425C2T-□E		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI425S2-□, VHI425S2T-□		0.72 (6.3)	0.86 (7.6)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.2 (19.4)	2.6 (23)	3.6 (31)	4.1 (36)	5.0 (44)	6.9 (61)	8.3 (73)	10.3 (91)	12.4 (109)	13.8 (122)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI540A2-□U, VHI540A2T-□U VHI540C2-□E, VHI540C2T-□E VHI540S2-□, VHI540S2T-□		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI560A2-□U, VHI560A2T-□U VHI560C2-□E, VHI560C2T-□E		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI560S2-□, VHI560S2T-□		1.7 (15.0)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	5.1 (45)	6.2 (54)	8.2 (72)	9.8 (86)	11.8 (104)	16.3 (144)	19.6 (173)	24.5 (210)	29.4 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI590A2-□U, VHI590A2T-□U		2.6 (23)	3.2 (28)	3.9 (34)	4.7 (41)	6.6 (58)	7.9 (69)	9.1 (80)	12.6 (111)	15.1 (133)	18.1 (160)	25.2 (220)	30.2 (260)	35.5 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
VHI590C2-□E, VHI590C2T-□E		2.7 (23)	3.3 (29)	4.1 (36)	4.9 (43)	6.8 (60)	8.2 (72)	9.4 (83)	13.0 (115)	15.6 (138)	18.7 (165)	26.0 (230)	31.2 (270)	36.8 (320)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
VHI590S2-□, VHI590S2T-□		2.6 (23)	3.1 (27)	3.8 (33)	4.6 (40)	6.4 (56)	7.7 (68)	8.8 (77)	12.3 (108)	14.7 (130)	17.6 (155)	24.5 (210)	29.4 (260)	34.6 (300)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2–20% less than the displayed value, depending on the load.

● Reversible Motors 50 Hz

Unit = N-m (lb-in)

Model Combination Type	Speed r/min	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	6	5	4.2
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
VHR206C2-□E		0.22 (1.94)	0.26 (2.3)	0.33 (2.9)	0.40 (3.5)	0.55 (4.8)	0.66 (5.8)	0.79 (6.9)	1.1 (9.7)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.5 (22)	3.2 (28)	3.8 (33)	4.2 (37)	5.1 (45)	6 (53)	6 (53)	6 (53)	6 (53)	6 (53)
VHR315C2-□E		0.56 (4.9)	0.68 (6.0)	0.84 (7.4)	1.0 (8.8)	1.4 (12.3)	1.7 (15.0)	2.0 (17.7)	2.8 (24)	3.2 (28)	3.9 (34)	5.4 (47)	6.5 (57)	8.1 (71)	9.7 (85)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
VHR425C2-□E, VHR425C2T-□E		0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.7 (15.0)	2.3 (20)	2.8 (24)	3.3 (29)	4.6 (40)	5.3 (46)	6.3 (55)	8.8 (77)	10.6 (93)	13.2 (116)	15.9 (140)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHR540C2-□E, VHR540C2T-□E		1.4 (12.3)	1.7 (15.0)	2.1 (18.5)	2.6 (23)	3.5 (30)	4.3 (38)	5.1 (45)	6.8 (60)	8.1 (71)	9.8 (86)	13.5 (119)	16.3 (144)	20.3 (179)	24.4 (210)	27.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR560C2-□E, VHR560C2T-□E		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR590C3-□E, VHR590C3T-□E		3.3 (29)	3.9 (34)	4.9 (43)	5.9 (52)	8.2 (72)	9.9 (87)	11.3 (100)	15.7 (138)	18.8 (166)	22.6 (200)	31.4 (270)	37.7 (330)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	-	-	-

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the load.

● Reversible Motors 60 Hz

Unit = N-m (lb-in)

Model Combination Type	Speed r/min	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
VHR206A2-□U, VHR206C2-□E		0.18 (1.59)	0.22 (1.94)	0.28 (2.4)	0.33 (2.9)	0.46 (4.0)	0.55 (4.8)	0.66 (5.8)	0.92 (8.1)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.1 (18.5)	2.6 (23)	3.2 (28)	3.5 (30)	4.2 (37)	5.0 (44)	6 (53)	6 (53)	6 (53)	6 (53)
VHR315A2-□U, VHR315C2-□E		0.47 (4.1)	0.57 (5.0)	0.71 (6.2)	0.85 (7.5)	1.2 (10.6)	1.4 (12.3)	1.7 (15.0)	2.4 (21)	2.7 (23)	3.3 (29)	4.5 (39)	5.4 (47)	6.8 (60)	8.1 (71)	9.0 (79)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
VHR425A2-□U, VHR425A2T-□U VHR425C2-□E, VHR425C2T-□E		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHR540A2-□U, VHR540A2T-□U		1.2 (10.6)	1.5 (13.2)	1.8 (15.9)	2.2 (19.4)	3.0 (26)	3.6 (31)	4.4 (38)	7.0 (61)	8.4 (74)	11.6 (102)	13.9 (123)	17.4 (153)	20.9 (184)	23.2 (200)	26.2 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR540C2-□E, VHR540C2T-□E		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR560A2-□U, VHR560A2T-□U VHR560C2-□E, VHR560C2T-□E		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR590A2-□U, VHR590A2T-□U		2.6 (23)	3.2 (28)	3.9 (34)	4.7 (41)	6.6 (58)	7.9 (69)	9.1 (80)	12.6 (111)	15.1 (133)	18.1 (160)	25.2 (220)	30.2 (260)	35.5 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	-	-
VHR590C3-□E, VHR590C3T-□E		2.7 (23)	3.3 (29)	4.1 (36)	4.9 (43)	6.8 (60)	8.2 (72)	9.4 (83)	13.0 (115)	15.6 (138)	18.7 (165)	26.0 (230)	31.2 (270)	36.8 (320)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	-	-	-

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the load.

■ Permissible Overhung Load and Permissible Thrust Load

→ Page A-16

■ Permissible Load Inertia J of Gearhead

→ Page A-17

- Introduction
- Induction Motors
- Reversible Motors
- Electro-magnetic Brake Motors
- V Series
- Clutch & Brake Motors
- Synchronous Motors
- Low-Speed Synchronous Motors
- Waterlight, Dust-Resistant Motors
- Torque Motors
- Right-Angle Gearheads
- Linear Heads
- Brake Pack
- Accessories
- Installation

Dimensions Unit = mm (in.)

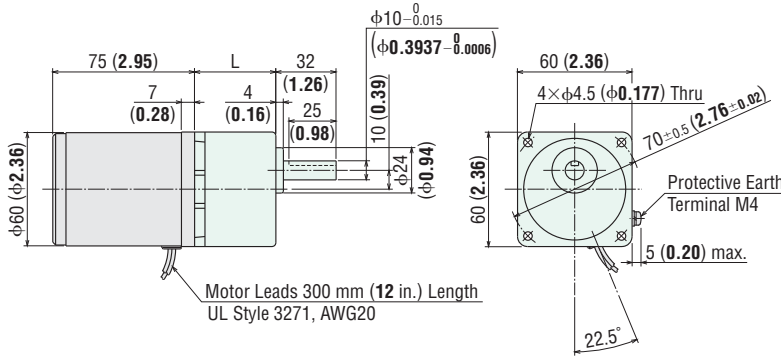
● Mounting screws are included with the motor. Dimensions for mounting screws → Page A-310

● 6 W (1/125 HP)

◇ Motor/Gearhead (Lead Wire Type)

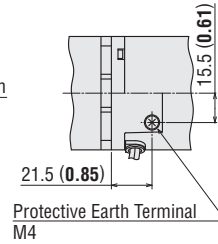
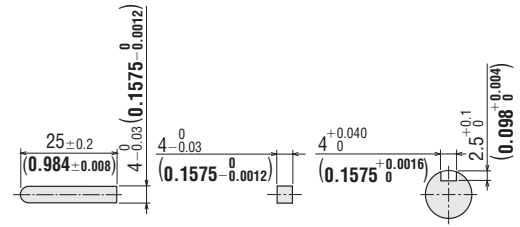
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI206 \square 2- \square \square	VHI206 \square 2-GV	GV2G \square	5~25	34 (1.34)	A474A
VHR206 \square 2- \square \square	VHR206 \square 2-GV		30~120	38 (1.50)	A474B
			150~360	43 (1.69)	A474C

Mass: 1.2 kg (2.6 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



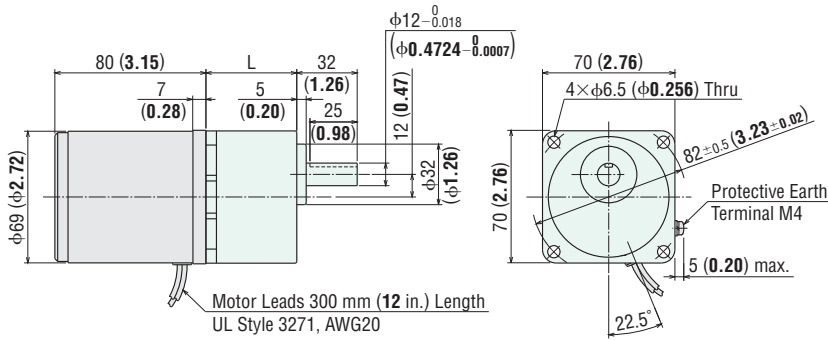
Detail Drawing of Protective Earth Terminal

● 15 W (1/50 HP)

◇ Motor/Gearhead (Lead Wire Type)

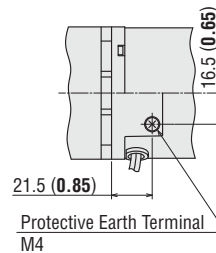
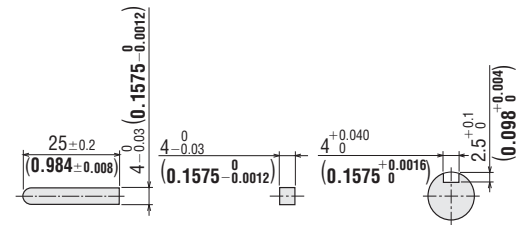
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI315 \square 2- \square \square	VHI315 \square 2-GV	GV3G \square	5~25	38 (1.50)	A475A
VHR315 \square 2- \square \square	VHR315 \square 2-GV		30~120	43 (1.69)	A475B
			150~360	48 (1.89)	A475C

Mass: 1.7 kg (3.7 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



Detail Drawing of Protective Earth Terminal

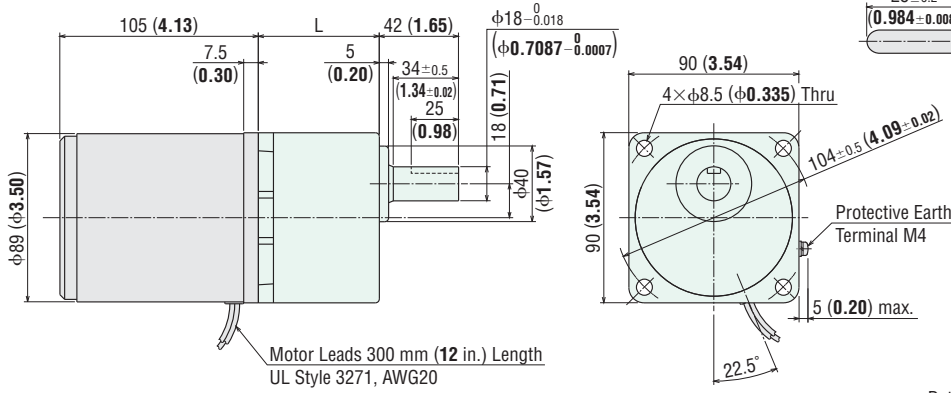
- Enter the power supply voltage (A or C) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (U or E) in the box (□) within the model name.

● 40 W (1/19 HP)

◇ Motor/Gearhead (Lead Wire Type)

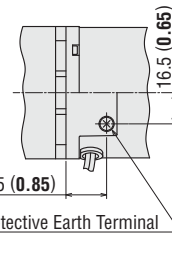
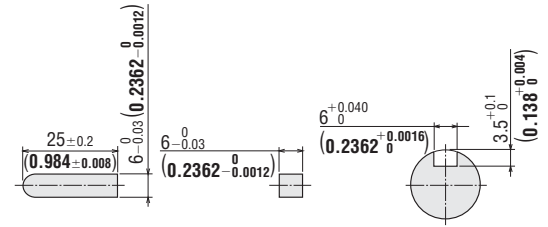
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI540 \square 2- \square	VHI540 \square 2-GVH	GVH5G \square	5~18	45 (1.77)	A477A
VHI540S2- \square	VHI540S2-GVH		25~100	58 (2.28)	A477B
VHR540 \square 2- \square	VHR540 \square 2-GVH		120~300	64 (2.52)	A477C

Mass: 4.0 kg (8.8 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)

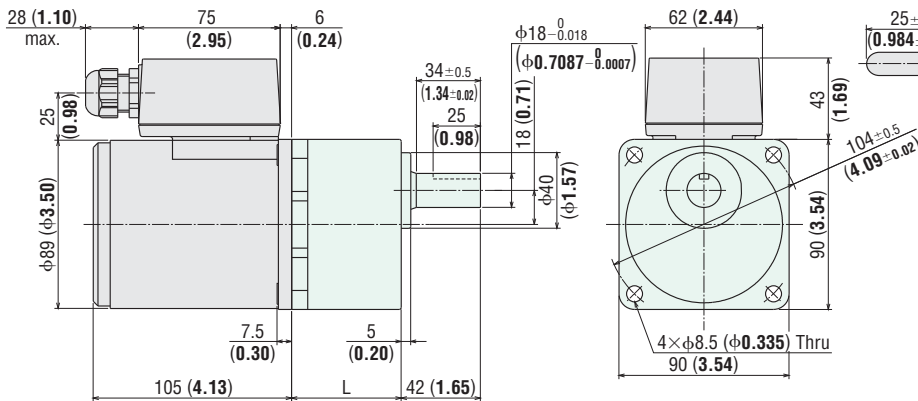


Detail Drawing of Protective Earth Terminal

◇ Motor/Gearhead (Terminal Box Type)

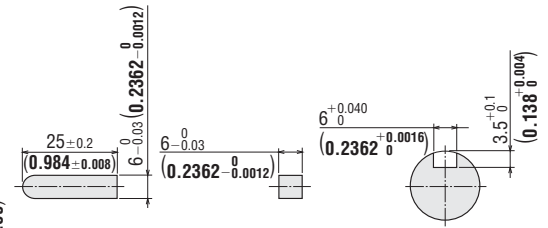
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI540 \square 2T- \square	VHI540 \square 2T-GVH	GVH5G \square	5~18	45 (1.77)	A212A
VHI540S2T- \square	VHI540S2T-GVH		25~100	58 (2.28)	A212B
VHR540 \square 2T- \square	VHR540 \square 2T-GVH		120~300	64 (2.52)	A212C

Mass: 4.1 kg (9.0 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



- Use cable with a diameter of $\phi 6 \sim \phi 12$ mm ($\phi 0.24 \sim \phi 0.47$ in.).
- Details of terminal box → Page A-314

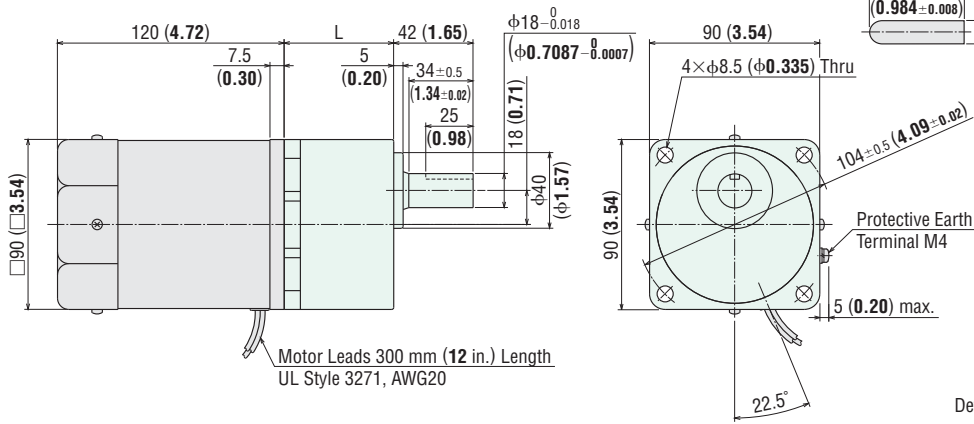
- Enter the power supply voltage (**A** or **C**) in the box (\square) within the model name.
- Enter the gear ratio in the box (\square) within the model name.
- Enter the type of the capacitor (**U** or **E**) in the box (\square) within the model name.

● 60 W (1/12 HP)

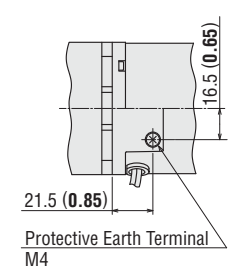
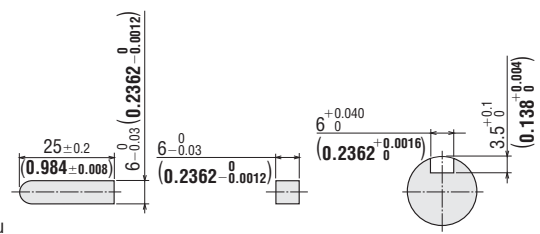
◇ Motor/Gearhead (Lead Wire Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI560■2-□□	VHI560■2-GVH	GVH5G□	5~18	45 (1.77)	A478A
VHI560S2-□□	VHI560S2-GVH		25~100	58 (2.28)	A478B
VHR560■2-□□	VHR560■2-GVH		120~300	64 (2.52)	A478C

Mass: 4.2 kg (9.2 lb.) (Including gearhead)



◇ Key and Key Slot
(The key is included with the gearhead)



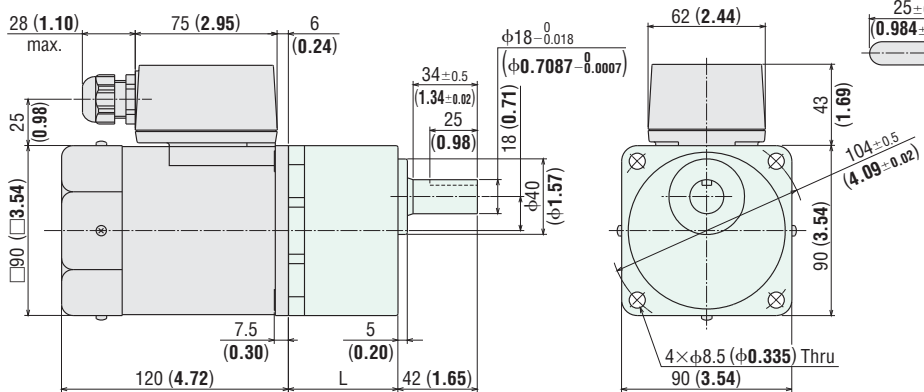
Detail Drawing of Protective Earth Terminal

Motor Leads 300 mm (12 in.) Length
UL Style 3271, AWG20

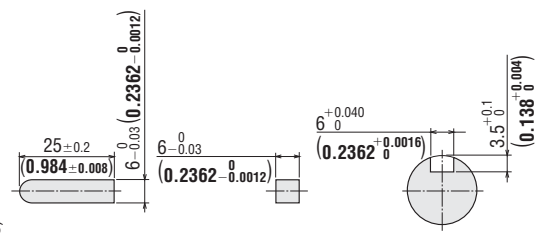
◇ Motor/Gearhead (Terminal Box Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI560■2T-□□	VHI560■2T-GVH	GVH5G□	5~18	45 (1.77)	A245A
VHI560S2T-□□	VHI560S2T-GVH		25~100	58 (2.28)	A245B
VHR560■2T-□□	VHR560■2T-GVH		120~300	64 (2.52)	A245C

Mass: 4.3 kg (9.5 lb.) (Including gearhead)



◇ Key and Key Slot
(The key is included with the gearhead)



- Use cable with a diameter of φ6~φ12 mm (φ0.24~φ0.47 in.).
- Details of terminal box → Page A-314

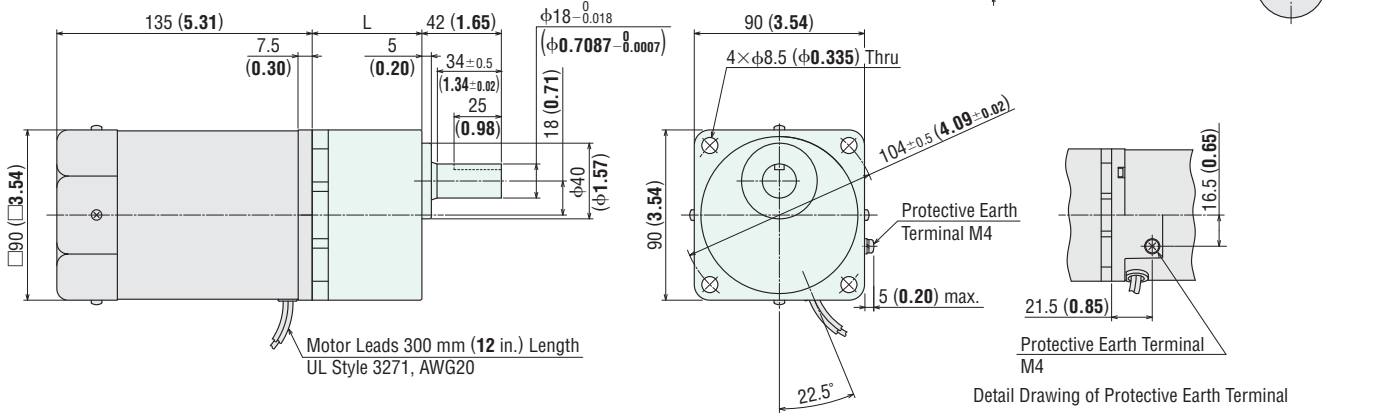
- Enter the power supply voltage (A or C) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (U or E) in the box (□) within the model name.

● 90 W (1/8 HP)

◇ Motor/Gearhead (Lead Wire Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI590 \square 2- \square \square	VHI590 \square 2-GVR	GVR5G \square	5~15	45 (1.77)	A479A
VHI590S2- \square	VHI590S2-GVR		18~36	58 (2.28)	A479B
VHR590A2- \square U	VHR590A2-GVR		50~180	70 (2.76)	A479C
VHR590C3- \square E	VHR590C3-GVR				

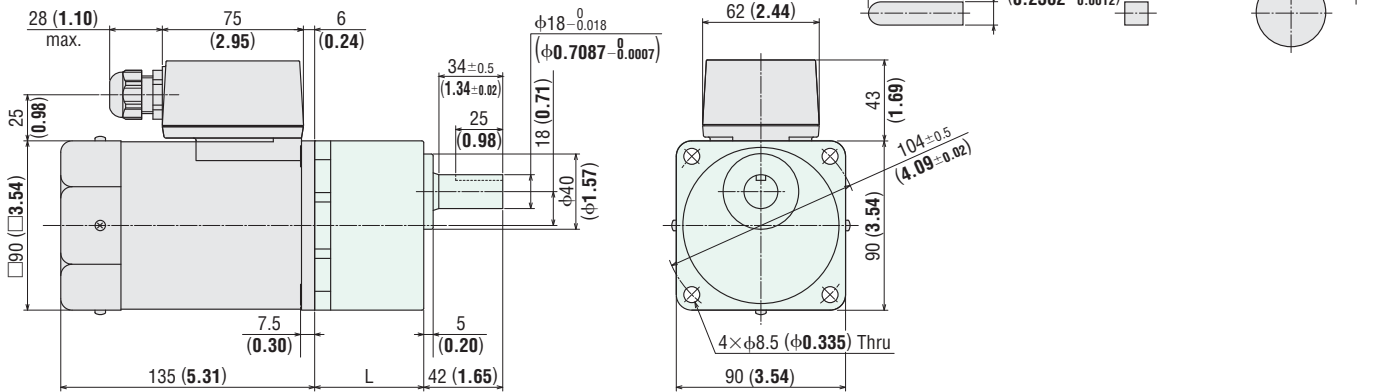
Mass: 4.7 kg (10.3 lb.) (Including gearhead)



◇ Motor/Gearhead (Terminal Box Type)

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHI590 \square 2T- \square \square	VHI590 \square 2T-GVR	GVR5G \square	5~15	45 (1.77)	A398A
VHI590S2T- \square	VHI590S2T-GVR		18~36	58 (2.28)	A398B
VHR590A2T- \square U	VHR590A2T-GVR		50~180	70 (2.76)	A398C
VHR590C3T- \square E	VHR590C3T-GVR				

Mass: 4.8 kg (10.6 lb.) (Including gearhead)

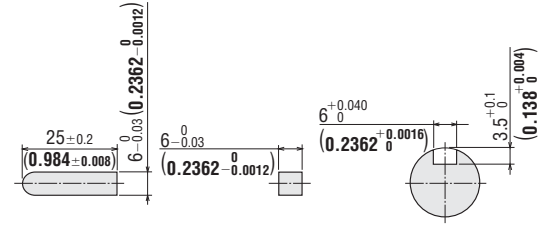


- Use cable with a diameter of φ6~φ12 mm (φ0.24~φ0.47 in.).
- Details of terminal box → Page A-314

- Enter the power supply voltage (A or C) in the box (■) within the model name.
Enter the gear ratio in the box (□) within the model name.
Enter the type of the capacitor (U or E) in the box (□) within the model name.

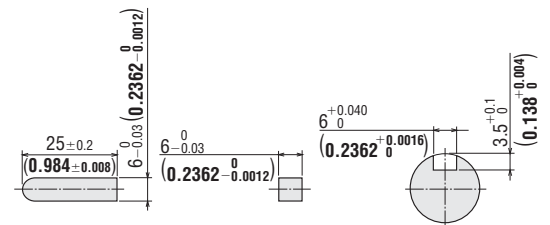
◇ Key and Key Slot

(The key is included with the gearhead)

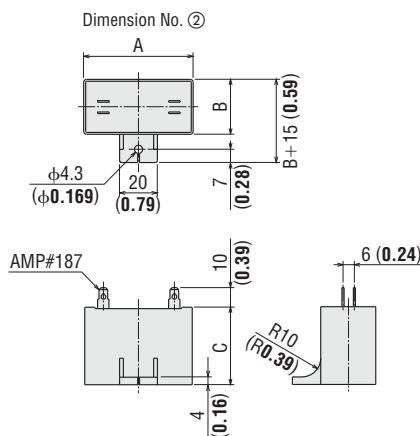
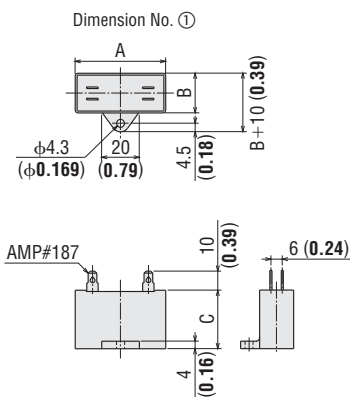


◇ Key and Key Slot

(The key is included with the gearhead)



● Capacitor (Included with single-phase motors)



● Capacitor Dimensions Unit = mm (in.)

◇ Induction Motors

Model		Capacitor Model	A	B	C	Mass g (oz.)	Dimension No.
Lead Wire Type	Terminal Box Type						
VHI206A2-□U	-	CH25FAUL2	31 (1.22)	17 (0.67)	27 (1.06)	21 (0.74)	①
VHI206C2-□E	-	CH06BFAUL	31 (1.22)	14.5 (0.57)	23.5 (0.93)	18 (0.64)	
VHI315A2-□U	-	CH45FAUL2	37 (1.46)	18 (0.71)	27 (1.06)	26 (0.92)	
VHI315C2-□E	-	CH10BFAUL	37 (1.46)	18 (0.71)	27 (1.06)	27 (0.95)	
VHI425A2-□U	VHI425A2T-□U	CH65CFAUL2	48 (1.89)	19 (0.75)	29 (1.14)	35 (1.24)	②
VHI425C2-□E	VHI425C2T-□E	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	37 (1.31)	
VHI540A2-□U	VHI540A2T-□U	CH90CFAUL2	48 (1.89)	22.5 (0.89)	31.5 (1.24)	45 (1.59)	
VHI540C2-□E	VHI540C2T-□E	CH23BFAUL	48 (1.89)	21 (0.83)	31 (1.22)	43 (1.52)	
VHI560A2-□U	VHI560A2T-□U	CH180CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	92 (3.2)	②
VHI560C2-□E	VHI560C2T-□E	CH40BFAUL	58 (2.28)	23.5 (0.93)	37 (1.46)	73 (2.6)	
VHI590A2-□U	VHI590A2T-□U	CH250CFAUL2	58 (2.28)	35 (1.38)	50 (1.97)	140 (4.9)	
VHI590C2-□E	VHI590C2T-□E	CH60BFAUL	58 (2.28)	29 (1.14)	41 (1.61)	92 (3.2)	

- A capacitor cap is included with a capacitor.
- Enter the gear ratio in the box (□) within the model name.

◇ Reversible Motors

Model		Capacitor Model	A	B	C	Mass g (oz.)	Dimension No.
Lead Wire Type	Terminal Box Type						
VHR206A2-□U	-	CH35FAUL2	31 (1.22)	17 (0.67)	27 (1.06)	22 (0.78)	①
VHR206C2-□E	-	CH08BFAUL	31 (1.22)	17 (0.67)	27 (1.06)	23 (0.81)	
VHR315A2-□U	-	CH60CFAUL2	38 (1.50)	21 (0.83)	31 (1.22)	35 (1.24)	
VHR315C2-□E	-	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	37 (1.31)	
VHR425A2-□U	VHR425A2T-□U	CH80CFAUL2	48 (1.89)	21 (0.83)	31 (1.22)	41 (1.45)	②
VHR425C2-□E	VHR425C2T-□E	CH25BFAUL	48 (1.89)	21 (0.83)	31 (1.22)	42 (1.48)	
VHR540A2-□U	VHR540A2T-□U	CH120CFAUL2	58 (2.28)	22 (0.87)	35 (1.38)	60 (2.1)	
VHR540C2-□E	VHR540C2T-□E	CH35BFAUL	58 (2.28)	22 (0.87)	35 (1.38)	59 (2.1)	
VHR560A2-□U	VHR560A2T-□U	CH200CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	91 (3.2)	②
VHR560C2-□E	VHR560C2T-□E	CH50BFAUL	58 (2.28)	29 (1.14)	41 (1.61)	93 (3.3)	
VHR590A2-□U	VHR590A2T-□U	CH300CFAUL2	58 (2.28)	35 (1.38)	50 (1.97)	140 (4.9)	
VHR590C3-□E	VHR590C3T-□E	CH70BFAUL	58 (2.28)	35 (1.38)	50 (1.97)	138 (4.9)	

- A capacitor cap is included with a capacitor.
- Enter the gear ratio in the box (□) within the model name.

Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- The direction of gearhead shaft rotation may differ from motor shaft rotation depending on the gear ratio of the gearhead. Refer to the gearmotor – torque table for the rotation direction.

Induction Motors

Single-Phase 110/115 VAC Single-Phase 220/230 VAC		Three-Phase 200/220/230 VAC	
Lead Wire Type	Terminal Box Type	Lead Wire Type	Terminal Box Type
<p>Clockwise</p>	<p>Clockwise</p>	<p>Clockwise</p>	<p>Clockwise</p>
<p>Counterclockwise</p>	<p>Counterclockwise</p>	<p>Counterclockwise</p> <p>To change the rotation direction, change any two connections between L1 (R), L2 (S) and L3 (T).</p>	<p>Counterclockwise</p> <p>To change the rotation direction, change any two connections between L1 (R), L2 (S) and L3 (T).</p>

PE: Protective Earth

Note:

- Change the direction of single-phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, motor may ignore reversing command or change its direction of rotation after some delay.

- How to connect a capacitor → Page A-313

Reversible Motors

Single-Phase 110/115 VAC Single-Phase 220/230 VAC	
Lead Wire Type	Terminal Box Type
<p>Clockwise</p> <p>To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p>Counterclockwise</p> <p>To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>	<p>Clockwise</p> <p>To rotate the motor in a clockwise (CW) direction, turn the switch to CW.</p> <p>Counterclockwise</p> <p>To rotate the motor in a counterclockwise (CCW) direction, turn the switch to CCW.</p>

PE: Protective Earth

Note:

- Connect a CR circuit for surge suppression to the forward/reverse select switch to protect the contact. **EPCR1201-2** (Sold separately) is available as an accessory. → Page A-302

- How to connect a capacitor → Page A-313

Motor and Gearhead Combinations

Motor and gearhead combinations are shown below.

Induction Motors

Type	Model	Motor Model	Gearhead Model	
Lead Wire Type	VHI206A2-□U	VHI206A2-GV	GV2G□	
	VHI206C2-□E	VHI206C2-GV		
	VHI315A2-□U	VHI315A2-GV	GV3G□	
	VHI315C2-□E	VHI315C2-GV		
	VHI425A2-□U	VHI425A2-GV	GV4G□	
	VHI425C2-□E	VHI425C2-GV		
	VHI425S2-□	VHI425S2-GV		
	VHI540A2-□U	VHI540A2-GVH		
	Terminal Box Type	VHI540C2-□E	VHI540C2-GVH	GVH5G□
		VHI540S2-□	VHI540S2-GVH	
		VHI560A2-□U	VHI560A2-GVH	GVH5G□
		VHI560C2-□E	VHI560C2-GVH	
		VHI560S2-□	VHI560S2-GVH	
		VHI590A2-□U	VHI590A2-GVR	
Terminal Box Type		VHI590C2-□E	VHI590C2-GVR	GVR5G□
		VHI590S2-□	VHI590S2-GVR	
		VHI425A2T-□U	VHI425A2T-GV	GV4G□
		VHI425C2T-□E	VHI425C2T-GV	
	VHI425S2T-□	VHI425S2T-GV		
	Terminal Box Type	VHI540A2T-□U	VHI540A2T-GVH	GVH5G□
		VHI540C2T-□E	VHI540C2T-GVH	
		VHI540S2T-□	VHI540S2T-GVH	
		VHI560A2T-□U	VHI560A2T-GVH	GVH5G□
		VHI560C2T-□E	VHI560C2T-GVH	
VHI560S2T-□		VHI560S2T-GVH		
VHI590A2T-□U		VHI590A2T-GVR		
Terminal Box Type		VHI590C2T-□E	VHI590C2T-GVR	GVR5G□
	VHI590S2T-□	VHI590S2T-GVR		

● Enter the gear ratio in the box (□) within the model name.

Reversible Motors

Type	Model	Motor Model	Gearhead Model	
Lead Wire Type	VHR206A2-□U	VHR206A2-GV	GV2G□	
	VHR206C2-□E	VHR206C2-GV		
	VHR315A2-□U	VHR315A2-GV	GV3G□	
	VHR315C2-□E	VHR315C2-GV		
	VHR425A2-□U	VHR425A2-GV	GV4G□	
	VHR425C2-□E	VHR425C2-GV		
	VHR540A2-□U	VHR540A2-GVH		
	VHR540C2-□E	VHR540C2-GVH		
	Terminal Box Type	VHR560A2-□U	VHR560A2-GVH	GVH5G□
		VHR560C2-□E	VHR560C2-GVH	
		VHR590A2-□U	VHR590A2-GVR	GVR5G□
		VHR590C2-□E	VHR590C2-GVR	
		VHR425A2T-□U	VHR425A2T-GV	
		VHR425C2T-□E	VHR425C2T-GV	
Terminal Box Type		VHR540A2T-□U	VHR540A2T-GVH	GVH5G□
		VHR560A2T-□U	VHR560A2T-GVH	
		VHR560C2T-□E	VHR560C2T-GVH	
		VHR590A2T-□U	VHR590A2T-GVR	GVR5G□
	VHR590C3T-□E	VHR590C3T-GVR		

● Enter the gear ratio in the box (□) within the model name.

High Strength, Long Life, Low Noise V Series Electromagnetic Brake Motors



Product Line

● Electromagnetic Brake Motors Combination Type [6 W (1/125 HP) to 25 W (1/30 HP)] (RoHS)

Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)	Gear Ratio
	Model	Model	Model	
Single-Phase 110/115 VAC	VHR206A2M-□U	VHR315A2M-□U	VHR425A2M-□U	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360
Single-Phase 220/230 VAC	VHR206C2M-□E	VHR315C2M-□E	VHR425C2M-□E	
Three-Phase 200/220/230 VAC	—	—	VHI425S2M-□	

● Enter the gear ratio in the box (□) within the model name.

● Electromagnetic Brake Motors Combination Type [40 W (1/19 HP) to 90 W (1/8 HP)] (RoHS)

Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)	Gear Ratio
	Model	Model	Model	
Single-Phase 110/115 VAC	VHR540A2M-□U	VHR560A2M-□U	VHR590A2M-□U	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250*, 300*
Single-Phase 220/230 VAC	VHR540C2M-□E	VHR560C2M-□E	VHR590C2M-□E	
Three-Phase 200/220/230 VAC	VHI540S2M-□	VHI560S2M-□	VHI590S2M-□	

*Except for 90 W (1/8 HP) type.

● Enter the gear ratio in the box (□) within the model name.

● Electromagnetic Brake Motors Motor/Gearhead (RoHS)

● Motor specifications, motor dimensions and gearhead dimensions are the same as those of the combination type.

◇ Motor [6 W (1/125 HP) to 25 W (1/30 HP)]

Power Supply Voltage	□60 mm (2.36 in.) 6 W (1/125 HP)	□70 mm (2.76 in.) 15 W (1/50 HP)	□80 mm (3.15 in.) 25 W (1/30 HP)
	Model	Model	Model
Single-Phase 110/115 VAC	VHR206A2M-GVU	VHR315A2M-GVU	VHR425A2M-GVU
Single-Phase 220/230 VAC	VHR206C2M-GVE	VHR315C2M-GVE	VHR425C2M-GVE
Three-Phase 200/220/230 VAC	—	—	VHI425S2M-GV

◇ Motor [40 W (1/19 HP) to 90 W (1/8 HP)]

Power Supply Voltage	□90 mm (3.54 in.) 40 W (1/19 HP)	□90 mm (3.54 in.) 60 W (1/12 HP)	□90 mm (3.54 in.) 90 W (1/8 HP)
	Model	Model	Model
Single-Phase 110/115 VAC	VHR540A2M-GVHU	VHR560A2M-GVHU	VHR590A2M-GVRU
Single-Phase 220/230 VAC	VHR540C2M-GVHE	VHR560C2M-GVHE	VHR590C2M-GVRE
Three-Phase 200/220/230 VAC	VHI540S2M-GVH	VHI560S2M-GVH	VHI590S2M-GVR

◇ Gearhead

Output Power of Applicable Motor	Model	Gear Ratio
6 W (1/125 HP)	GV2G□	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300, 360
15 W (1/50 HP)	GV3G□	
25 W (1/30 HP)	GV4G□	
40 W (1/19 HP)	GVH5G□	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 250, 300
60 W (1/12 HP)		
90 W (1/8 HP)	GVR5G□	5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180

● Enter the gear ratio in the box (□) within the model name.

Specifications

● Motor (RoHS)

◇ Single-Phase Type – 30 Minute Rating



Model	Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN-m (oz-in)	Rated Torque mN-m (oz-in)	Rated Speed r/min	Capacitor μF
Ⓜ VHR206A2M-□U	6 (1/125)	Single-Phase 110	60	0.235	45 (6.3)	41 (5.8)	1450	3.5
		Single-Phase 115	60	0.242	45 (6.3)	41 (5.8)	1450	
Ⓜ VHR206C2M-□E	6 (1/125)	Single-Phase 220	50	0.111	50 (7.1)	49 (6.9)	1150	0.8
			60	0.115	45 (6.3)	41 (5.8)	1450	
		Single-Phase 230	50	0.115	50 (7.1)	49 (6.9)	1200	
			60	0.118	45 (6.3)	41 (5.8)	1450	
Ⓜ VHR315A2M-□U	15 (1/50)	Single-Phase 110	60	0.42	100 (14.2)	105 (14.9)	1450	6.0
		Single-Phase 115	60	0.41	100 (14.2)	105 (14.9)	1450	
Ⓜ VHR315C2M-□E	15 (1/50)	Single-Phase 220	50	0.18	100 (14.2)	125 (17.7)	1200	1.5
			60	0.20	100 (14.2)	105 (14.9)	1450	
		Single-Phase 230	50	0.19	100 (14.2)	125 (17.7)	1200	
			60	0.20	100 (14.2)	105 (14.9)	1450	
Ⓜ VHR425A2M-□U	25 (1/30)	Single-Phase 110	60	0.54	140 (19.8)	170 (24)	1450	8.0
		Single-Phase 115	60	0.54	140 (19.8)	170 (24)	1450	
Ⓜ VHR425C2M-□E	25 (1/30)	Single-Phase 220	60	0.28	140 (19.8)	170 (24)	1450	2.0
			50	0.25	160 (22)	205 (29)	1200	
		Single-Phase 230	60	0.28	140 (19.8)	170 (24)	1450	
			50	0.25	160 (22)	205 (29)	1200	
Ⓜ VHR540A2M-□U	40 (1/19)	Single-Phase 110	60	0.81	260 (36)	270 (38)	1450	12
		Single-Phase 115	60	0.81	260 (36)	270 (38)	1450	
Ⓜ VHR540C2M-□E	40 (1/19)	Single-Phase 220	60	0.43	260 (36)	260 (36)	1500	3.5
			50	0.38	270 (38)	315 (44)	1250	
		Single-Phase 230	60	0.43	260 (36)	260 (36)	1500	
			50	0.38	270 (38)	315 (44)	1250	
Ⓜ VHR560A2M-□U	60 (1/12)	Single-Phase 110	60	1.24	380 (53)	405 (57)	1450	20
		Single-Phase 115	60	1.24	380 (53)	405 (57)	1450	
Ⓜ VHR560C2M-□E	60 (1/12)	Single-Phase 220	60	0.61	380 (53)	405 (57)	1450	5.0
			50	0.59	470 (66)	490 (69)	1200	
		Single-Phase 230	60	0.61	380 (53)	405 (57)	1450	
			50	0.59	470 (66)	490 (69)	1200	
Ⓜ VHR590A2M-□U	90 (1/8)	Single-Phase 110	60	1.81	590 (83)	585 (83)	1500	30
		Single-Phase 115	60	1.81	590 (83)	585 (83)	1500	
Ⓜ VHR590C2M-□E	90 (1/8)	Single-Phase 220	60	0.96	590 (83)	605 (85)	1450	7.0
			50	0.82	600 (85)	730 (103)	1200	
		Single-Phase 230	60	0.96	590 (83)	605 (85)	1450	
			50	0.82	600 (85)	730 (103)	1200	

Ⓜ: Impedance protected

Ⓜ: Contains a built-in thermal protector (automatic return type).

If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. (The power supply to the electromagnetic brake is kept and the brake is released.) When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

● Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.

● The **U** and **E** at the end of the model name indicate that the unit includes a capacitor. These letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the model name on the nameplate is the approved model name.

◇ Three-Phase Type – Continuous Rating



Model	Output Power W (HP)	Voltage VAC	Frequency Hz	Current A	Starting Torque mN-m (oz-in)	Rated Torque mN-m (oz-in)	Rated Speed r/min
Ⓜ VHI425S2M-□	25 (1/30)	Three-Phase 200	50	0.23	240 (34)	190 (26)	1300
			60	0.21	160 (22)	160 (22)	1550
		Three-Phase 220	60	0.20	160 (22)	150 (21)	1600
			Three-Phase 230	60	0.21	160 (22)	150 (21)
Ⓜ VHI540S2M-□	40 (1/19)	Three-Phase 200	50	0.32	400 (56)	300 (42)	1300
			60	0.30	260 (36)	260 (36)	1550
		Three-Phase 220	60	0.28	260 (36)	240 (34)	1600
			Three-Phase 230	60	0.29	260 (36)	240 (34)
Ⓜ VHI560S2M-□	60 (1/12)	Three-Phase 200	50	0.50	600 (85)	450 (63)	1300
			60	0.43	500 (71)	380 (53)	1550
		Three-Phase 220	60	0.45	500 (71)	380 (53)	1600
			Three-Phase 230	60	0.46	500 (71)	380 (53)
Ⓜ VHI590S2M-□	90 (1/8)	Three-Phase 200	50	0.64	850 (120)	680 (96)	1300
			60	0.59	700 (99)	570 (80)	1550
		Three-Phase 220	60	0.60	700 (99)	570 (80)	1600
			Three-Phase 230	60	0.61	700 (99)	570 (80)

Ⓜ: Contains a built-in thermal protector (automatic return type).

If a motor overheats for any reason, the thermal protector is activated and the motor is stopped. (The power supply to the electromagnetic brake is kept and the brake is released.) When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor power off before inspecting.

● Enter the gear ratio in the box (□) within the model name of the combination type. Enter the shaft type **GV**, **GVH** or **GVR** in the box (□) within the model name of the pinion shaft type. The values for each specification apply to the motor only.

● Electromagnetic Brake (Power off activated type)

Model	Voltage VAC	Frequency Hz	Current A	Input W	Holding Brake Torque mN·m (oz-in)
VHR206A2M-□U	Single-Phase 110	60	0.03	3	30 (4.2)
	Single-Phase 115	60			
VHR206C2M-□E	Single-Phase 220	50	0.02	3	30 (4.2)
		60			
	Single-Phase 230	50 60	0.02	3	30 (4.2)
VHR315A2M-□U	Single-Phase 110	60			
	Single-Phase 115	60			
VHR315C2M-□E	Single-Phase 220	50	0.05	7	80 (11.3)
		60			
	Single-Phase 230	50 60	0.05	7	80 (11.3)
VHR425A2M-□U	Single-Phase 110	60			
	Single-Phase 115	60			
VHR425C2M-□E	Single-Phase 220	60	0.05	7	100 (14.2)
		60			
	Single-Phase 230	50 60	0.05	7	100 (14.2)
VHR540A2M-□U	Single-Phase 110	60			
	Single-Phase 115	60			
VHR540C2M-□E	Single-Phase 220	60	0.04	6	200 (28)
		60			
	Single-Phase 230	50 60	0.04	6	200 (28)
VHR560A2M-□U	Single-Phase 110	60			
	Single-Phase 115	60			
VHR560C2M-□E	Single-Phase 220	60	0.07	10	500 (71)
		60			
	Single-Phase 230	50 60	0.07	10	500 (71)
VHR590A2M-□U	Single-Phase 110	60			
	Single-Phase 115	60			
VHR590C2M-□E	Single-Phase 220	60	0.07	10	500 (71)
		60			
	Single-Phase 230	50 60	0.07	10	500 (71)

● The values for each specification apply to the motor only.

Model	Voltage VAC	Frequency Hz	Current A	Input W	Holding Brake Torque mN·m (oz-in)
VHI425S2M-□	Single-Phase 200	50	0.05	7	100 (14.2)
		60			
	Single-Phase 220	60	0.05	7	100 (14.2)
Single-Phase 230	60				
VHI540S2M-□	Single-Phase 200	50	0.04	6	200 (28)
		60			
	Single-Phase 220	60	0.04	6	200 (28)
Single-Phase 230	60				
VHI560S2M-□	Single-Phase 200	50	0.07	10	500 (71)
		60			
	Single-Phase 220	60	0.07	10	500 (71)
Single-Phase 230	60				
VHI590S2M-□	Single-Phase 200	50	0.07	10	500 (71)
		60			
	Single-Phase 220	60	0.07	10	500 (71)
Single-Phase 230	60				

● The values for each specification apply to the motor only.

■ General Specifications

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after rated operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz or 60 Hz applied between the windings and the case for 1 minute after rated operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings is 80°C (144°F) or less measured by the resistance change method after rated operation under normal ambient temperature and humidity. [Three-phase type: 70°C (126°F) or less]
Insulation Class	Class B [130°C (266°F)]
Overheat Protection	6 W (1/125 HP) type has impedance protection. All others have built-in thermal protector (automatic return type). Open: 130±5°C (266±9°F), Close: 82±15°C (179.6±27°F)
Ambient Temperature	Three-phase 200 VAC: -10~+50°C (+14~+122°F) (non-freezing) Single-phase 110/115 VAC, Single-phase 220/230 VAC, Three-phase 220/230 VAC: -10~+40°C (+14~+104°F) (non-freezing)
Ambient Humidity	85% or less (non-condensing)
Degree of Protection	6 W (1/125 HP), 15 W (1/50 HP), 25 W (1/30 HP), 40 W (1/19 HP): IP20 60 W (1/12 HP), 90 W (1/8 HP): IP40

Gearmotor – Torque Table

● 50 Hz

Unit = N·m (lb·in)

Model Combination Type	Speed r/min Gear Ratio	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3	6	5	4.2
		5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
VHR206C2M-□E		0.22 (1.94)	0.26 (2.3)	0.33 (2.9)	0.40 (3.5)	0.55 (4.8)	0.66 (5.8)	0.79 (6.9)	1.1 (9.7)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.5 (22)	3.2 (28)	3.8 (33)	4.2 (37)	5.1 (45)	6 (53)	6 (53)	6 (53)	6 (53)	6 (53)
VHR315C2M-□E		0.56 (4.9)	0.68 (6.0)	0.84 (7.4)	1.0 (8.8)	1.4 (12.3)	1.7 (15)	2.0 (17.7)	2.8 (24)	3.2 (28)	3.9 (34)	5.4 (47)	6.5 (57)	8.1 (71)	9.7 (85)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
VHR425C2M-□E		0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.7 (15)	2.3 (20)	2.8 (24)	3.3 (29)	4.6 (40)	5.3 (46)	6.3 (55)	8.8 (77)	10.6 (93)	13.2 (116)	15.9 (140)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHR540C2M-□E		1.4 (12.3)	1.7 (15)	2.1 (18.5)	2.6 (23)	3.5 (30)	4.3 (38)	5.1 (45)	6.8 (60)	8.1 (71)	9.8 (86)	13.5 (119)	16.3 (144)	20.3 (179)	24.4 (210)	27.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR560C2M-□E		2.2 (19.4)	2.6 (23)	3.3 (29)	4.0 (35)	5.5 (48)	6.6 (58)	7.9 (69)	10.5 (92)	12.6 (111)	15.2 (134)	21.1 (186)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR590C2M-□E		3.3 (29)	3.9 (34)	4.9 (43)	5.9 (52)	8.2 (72)	9.9 (87)	11.3 (100)	15.7 (138)	18.8 (166)	22.6 (200)	31.4 (270)	37.7 (330)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
VHI425S2M-□		0.86 (7.6)	1.0 (8.8)	1.3 (11.5)	1.5 (13.2)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	4.9 (43)	5.9 (52)	8.2 (72)	9.8 (86)	12.3 (108)	14.7 (130)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI540S2M-□		1.4 (12.3)	1.6 (14.1)	2.0 (17.7)	2.4 (21)	3.4 (30)	4.1 (36)	4.9 (43)	6.5 (57)	7.7 (68)	9.3 (82)	12.9 (114)	15.5 (137)	19.4 (171)	23.2 (200)	25.8 (220)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI560S2M-□		2.0 (17.7)	2.4 (21)	3.0 (26)	3.6 (31)	5.1 (45)	6.1 (53)	7.3 (64)	9.7 (85)	11.6 (102)	13.9 (123)	19.4 (171)	23.2 (200)	29.0 (250)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI590S2M-□		3.1 (27)	3.7 (32)	4.6 (40)	5.5 (48)	7.7 (68)	9.2 (81)	10.5 (92)	14.6 (129)	17.5 (154)	21.1 (186)	29.2 (250)	35.1 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the load.

● 60 Hz

Unit = N·m (lb·in)

Model Combination Type	Speed r/min Gear Ratio	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
		5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
VHR206A2M-□U		0.18 (1.59)	0.22 (1.94)	0.28 (2.4)	0.33 (2.9)	0.46 (4.0)	0.55 (4.8)	0.66 (5.8)	0.92 (8.1)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.1 (18.5)	2.6 (23)	3.2 (30)	3.5 (37)	4.2 (44)	5.0 (53)	6 (53)	6 (53)	6 (53)	6 (53)
VHR315A2M-□U		0.47 (4.1)	0.57 (5.0)	0.71 (6.2)	0.85 (7.5)	1.2 (10.6)	1.4 (12.3)	1.7 (15)	2.4 (21)	2.7 (23)	3.3 (29)	4.5 (39)	5.4 (47)	6.8 (60)	8.1 (71)	9.0 (79)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)	10 (88)
VHR425A2M-□U		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHR425C2M-□E		0.77 (6.8)	0.92 (8.1)	1.1 (9.7)	1.4 (12.3)	1.9 (16.8)	2.3 (20)	2.8 (24)	3.8 (33)	4.4 (38)	5.3 (46)	7.3 (64)	8.8 (77)	11.0 (97)	13.2 (116)	14.6 (129)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHR540A2M-□U		1.2 (10.6)	1.5 (13.2)	1.8 (15.9)	2.2 (19.4)	3.0 (26)	3.6 (31)	4.4 (38)	5.8 (51)	7.0 (61)	8.4 (74)	11.6 (102)	13.9 (123)	17.4 (153)	20.9 (184)	23.2 (200)	26.2 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR540C2M-□E		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR560A2M-□U		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR560C2M-□E		1.8 (15.9)	2.2 (19.4)	2.7 (23)	3.3 (29)	4.6 (40)	5.5 (48)	6.6 (58)	8.7 (76)	10.4 (92)	12.5 (110)	17.4 (153)	20.9 (184)	26.1 (230)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHR590A2M-□U		2.6 (23)	3.2 (28)	3.9 (34)	4.7 (41)	6.6 (58)	7.9 (69)	9.1 (80)	12.6 (111)	15.1 (133)	18.1 (160)	25.2 (220)	30.2 (260)	35.5 (310)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
VHR590C2M-□E		2.7 (23)	3.3 (29)	4.1 (36)	4.9 (43)	6.8 (60)	8.2 (72)	9.4 (83)	13.0 (115)	15.6 (138)	18.7 (165)	26.0 (230)	31.2 (270)	36.8 (320)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)
VHI425S2M-□ (200 VAC)		0.72 (6.3)	0.86 (7.6)	1.1 (9.7)	1.3 (11.5)	1.8 (15.9)	2.2 (19.4)	2.6 (23)	3.6 (31)	4.1 (36)	5.0 (44)	6.9 (61)	8.3 (73)	10.3 (91)	12.4 (109)	13.8 (122)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI425S2M-□ (220/230 VAC)		0.68 (6.0)	0.81 (7.1)	1.0 (8.8)	1.2 (10.6)	1.7 (15)	2.0 (17.7)	2.4 (21)	3.4 (30)	3.9 (34)	4.6 (40)	6.5 (57)	7.7 (68)	9.7 (85)	11.6 (102)	12.9 (114)	15.5 (137)	16 (141)	16 (141)	16 (141)	16 (141)	16 (141)
VHI540S2M-□ (200 VAC)		1.2 (10.6)	1.4 (12.3)	1.8 (15.9)	2.1 (18.5)	2.9 (25)	3.5 (30)	4.2 (37)	5.6 (49)	6.7 (59)	8.0 (70)	11.2 (99)	13.4 (118)	16.8 (148)	20.1 (177)	22.4 (198)	25.3 (220)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI540S2M-□ (220/230 VAC)		1.1 (9.7)	1.3 (11.5)	1.6 (14.1)	1.9 (16.8)	2.7 (23)	3.2 (28)	3.9 (34)	5.2 (46)	6.2 (54)	7.4 (65)	10.3 (91)	12.4 (109)	15.5 (137)	18.6 (164)	20.6 (182)	23.3 (200)	29.2 (250)	30 (260)	30 (260)	30 (260)	30 (260)
VHI560S2M-□		1.7 (15)	2.1 (18.5)	2.6 (23)	3.1 (27)	4.3 (38)	5.1 (45)	6.2 (54)	8.2 (72)	9.8 (86)	11.8 (104)	16.3 (144)	19.6 (173)	24.5 (210)	29.4 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)	30 (260)
VHI590S2M-□		2.6 (23)	3.1 (27)	3.8 (33)	4.6 (40)	6.4 (56)	7.7 (68)	8.8 (77)	12.3 (108)	14.7 (130)	17.6 (155)	24.5 (210)	29.4 (260)	34.6 (300)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)	40 (350)

- Enter the gear ratio in the box (□) within the model name.
- A colored background (□) indicates gear shaft rotation in the same direction as the motor shaft, while the others rotate in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500 r/min, 60 Hz: 1800 r/min) by the gear ratio.
The actual speed is 2~20% less than the displayed value, depending on the load.

Permissible Overhung Load and Permissible Thrust Load

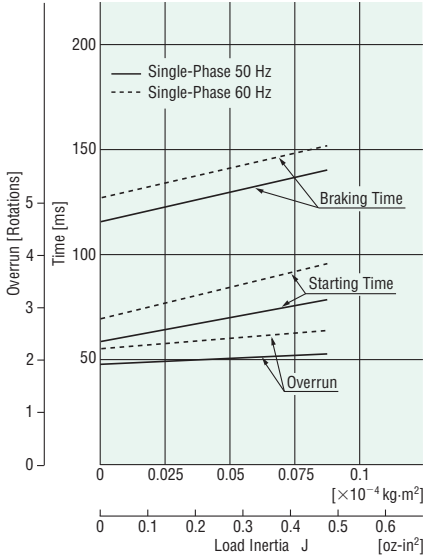
→ Page A-16

Permissible Load Inertia J of Gearhead

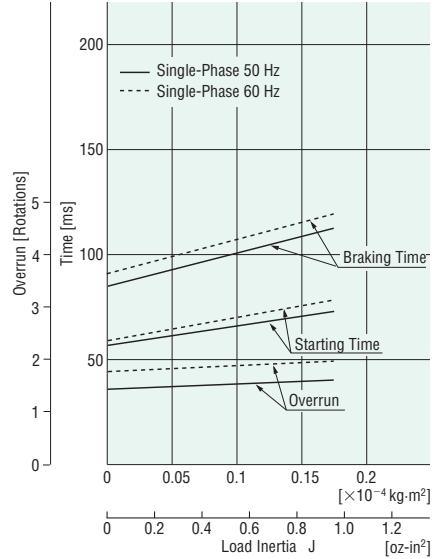
→ Page A-17

Starting and Braking Characteristics (Reference values, motor only)

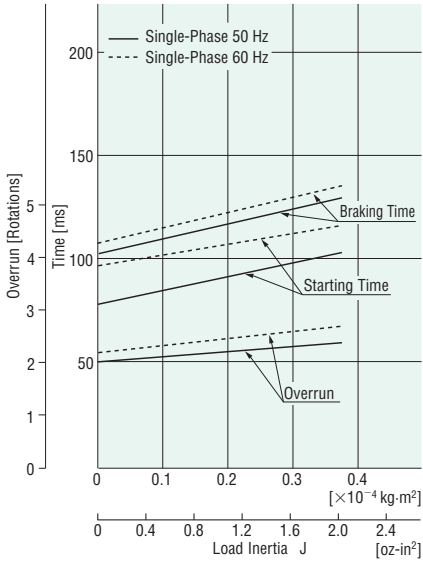
VHR206A2M
VHR206C2M



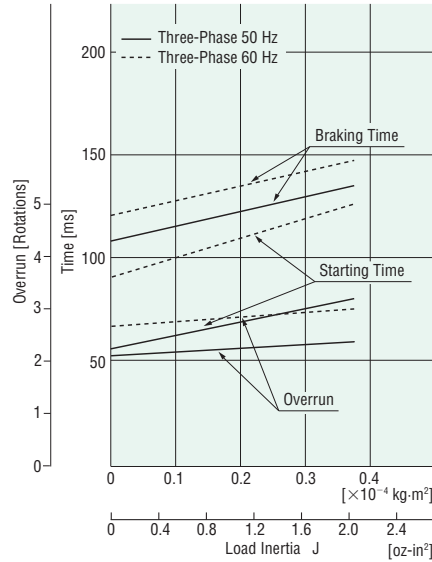
VHR315A2M
VHR315C2M



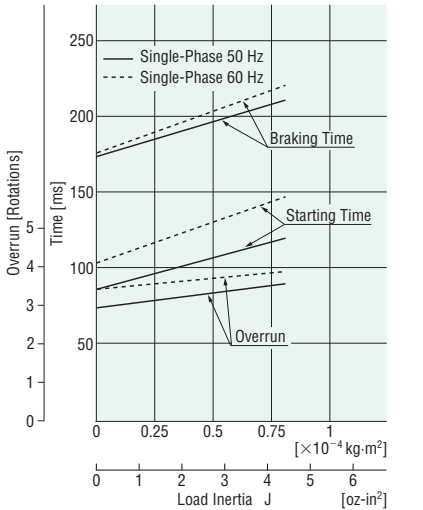
VHR425A2M
VHR425C2M



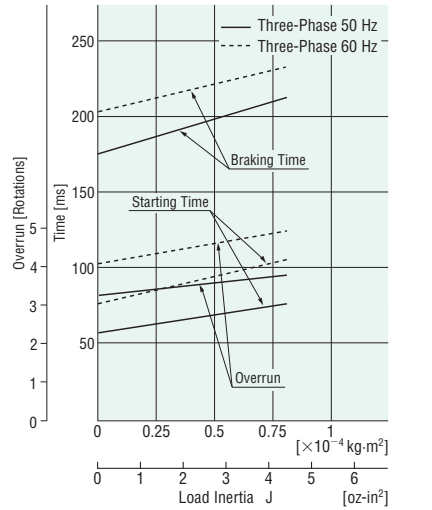
VHI425S2M



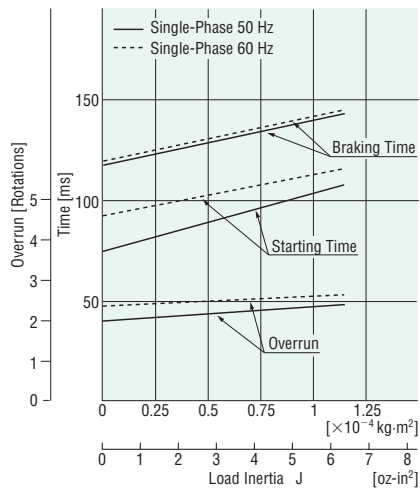
VHR540A2M
VHR540C2M



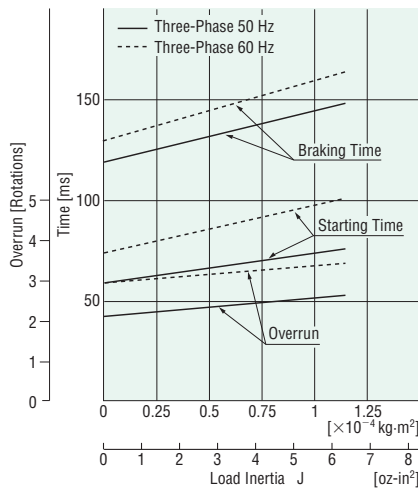
VHI540S2M



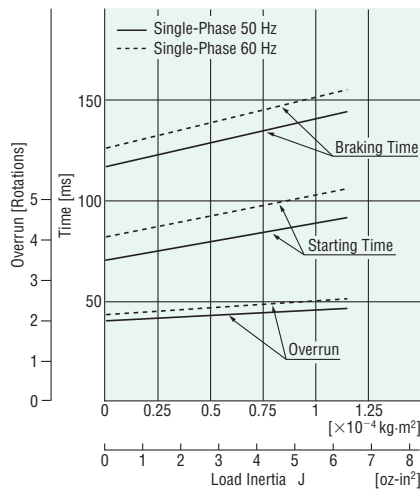
VHR560A2M
VHR560C2M



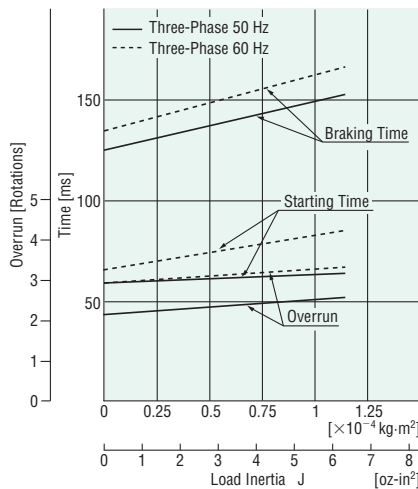
VHI560S2M



VHR590A2M
VHR590C2M



VHI590S2M



Dimensions Unit = mm (in.)

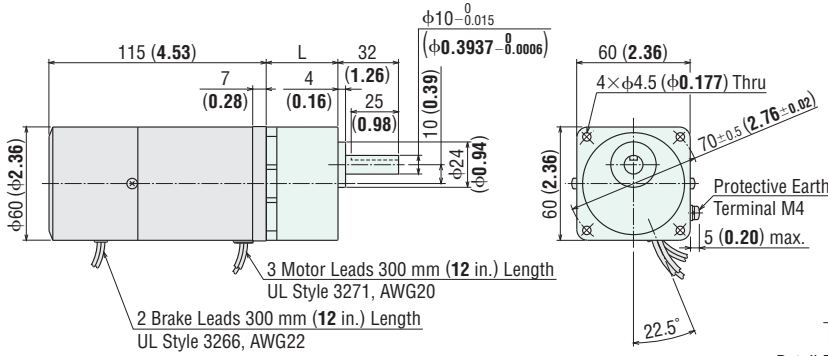
● Mounting screws are included with the motor. Dimensions for mounting screws → Page A-310

● 6 W (1/125 HP)

◇ Motor/Gearhead

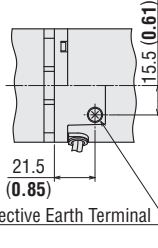
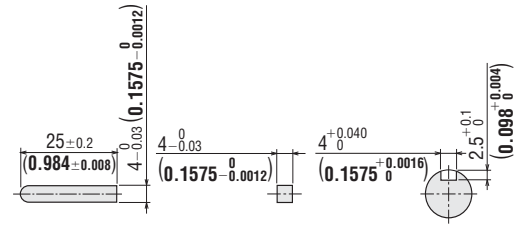
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR206 ■ 2M -□□	VHR206■2M-GV	GV2G□	5~25	34 (1.34)	A480A
			30~120	38 (1.50)	A480B
			150~360	43 (1.69)	A480C

Mass: 1.4 kg (3.1 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



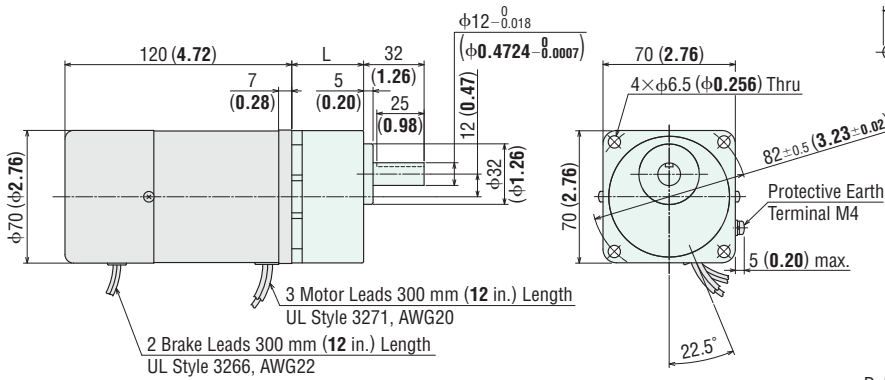
Detail Drawing of Protective Earth Terminal

● 15 W (1/50 HP)

◇ Motor/Gearhead

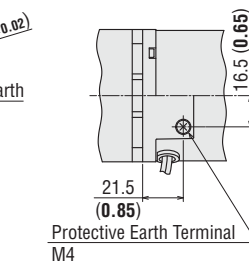
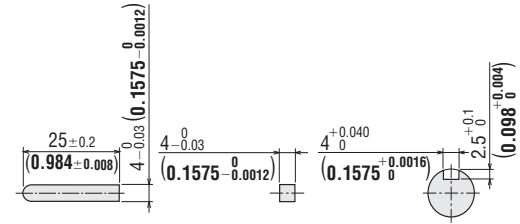
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR315 ■ 2M -□□	VHR315■2M-GV	GV3G□	5~25	38 (1.50)	A481A
			30~120	43 (1.69)	A481B
			150~360	48 (1.89)	A481C

Mass: 1.9 kg (4.2 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



Detail Drawing of Protective Earth Terminal

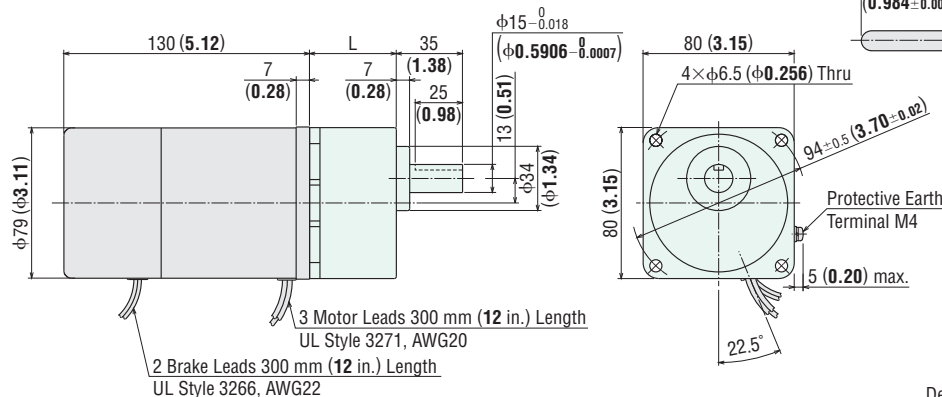
● Enter the power supply voltage (A or C) in the box (■) within the model name.
Enter the gear ratio in the box (□) within the model name.
Enter the type of the capacitor (U or E) in the box (□) within the model name.

● 25 W (1/30 HP)

◇ Motor/Gearhead

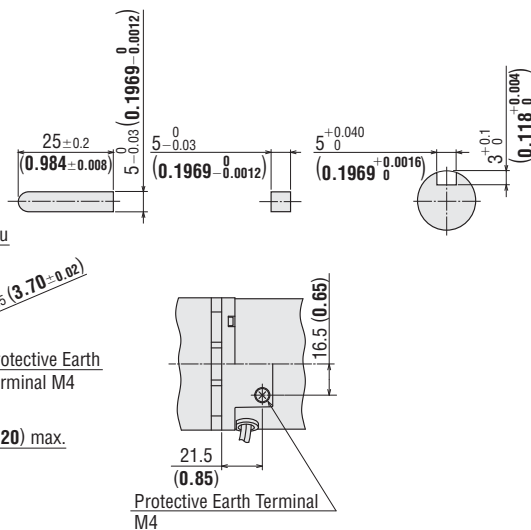
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR425 ■2M-□□	VHR425■2M-GV	GV4G□	5~25	41 (1.61)	A482A
VHI425S2M -□□	VHI425S2M-GV		30~120	46 (1.81)	A482B
			150~360	51 (2.01)	A482C

Mass: 2.95 kg (6.5 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



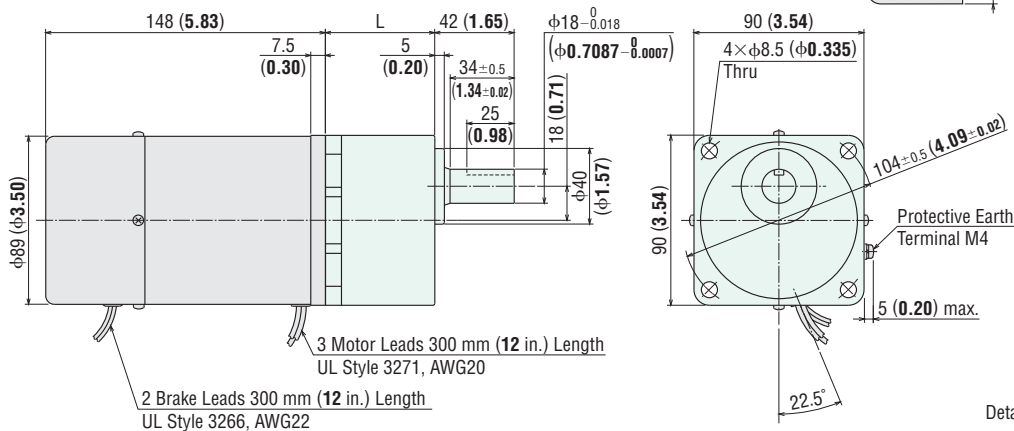
Detail Drawing of Protective Earth Terminal

● 40 W (1/19 HP)

◇ Motor/Gearhead

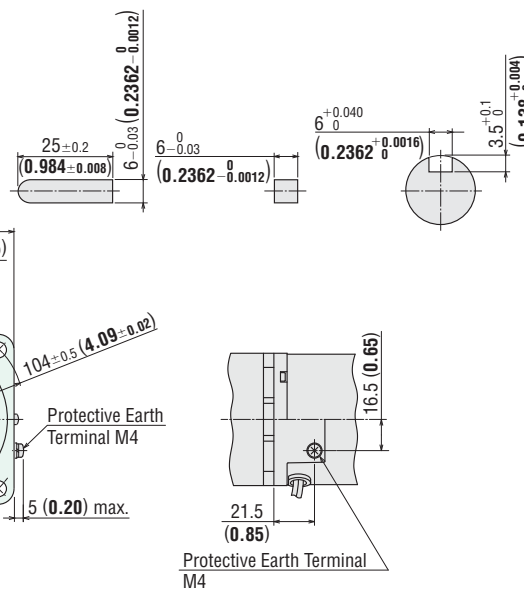
Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR540 ■2M-□□	VHR540■2M-GVH	GVH5G□	5~18	45 (1.77)	A483A
VHI540S2M -□□	VHI540S2M-GVH		25~100	58 (2.28)	A483B
			120~300	64 (2.52)	A483C

Mass: 4.4 kg (9.7 lb.) (Including gearhead)



◇ Key and Key Slot

(The key is included with the gearhead)



Detail Drawing of Protective Earth Terminal

- Enter the power supply voltage (A or C) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (U or E) in the box (□) within the model name.

● 60 W (1/12 HP)

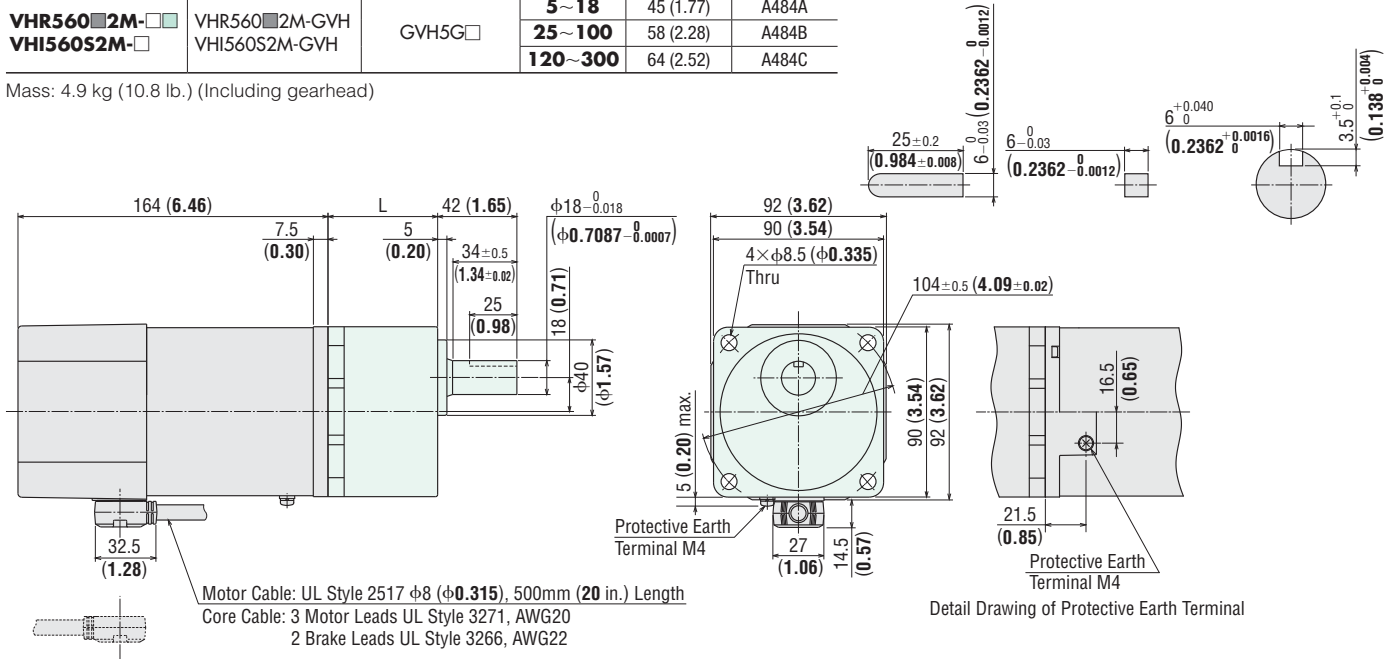
◇ Motor/Gearhead

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR560■2M-□□	VHR560■2M-GVH	GVH5G□	5~18	45 (1.77)	A484A
VHI560S2M-□	VHI560S2M-GVH		25~100	58 (2.28)	A484B
			120~300	64 (2.52)	A484C

Mass: 4.9 kg (10.8 lb.) (Including gearhead)

◇ Key and Key Slot

(The key is included with the gearhead)



● 90 W (1/8 HP)

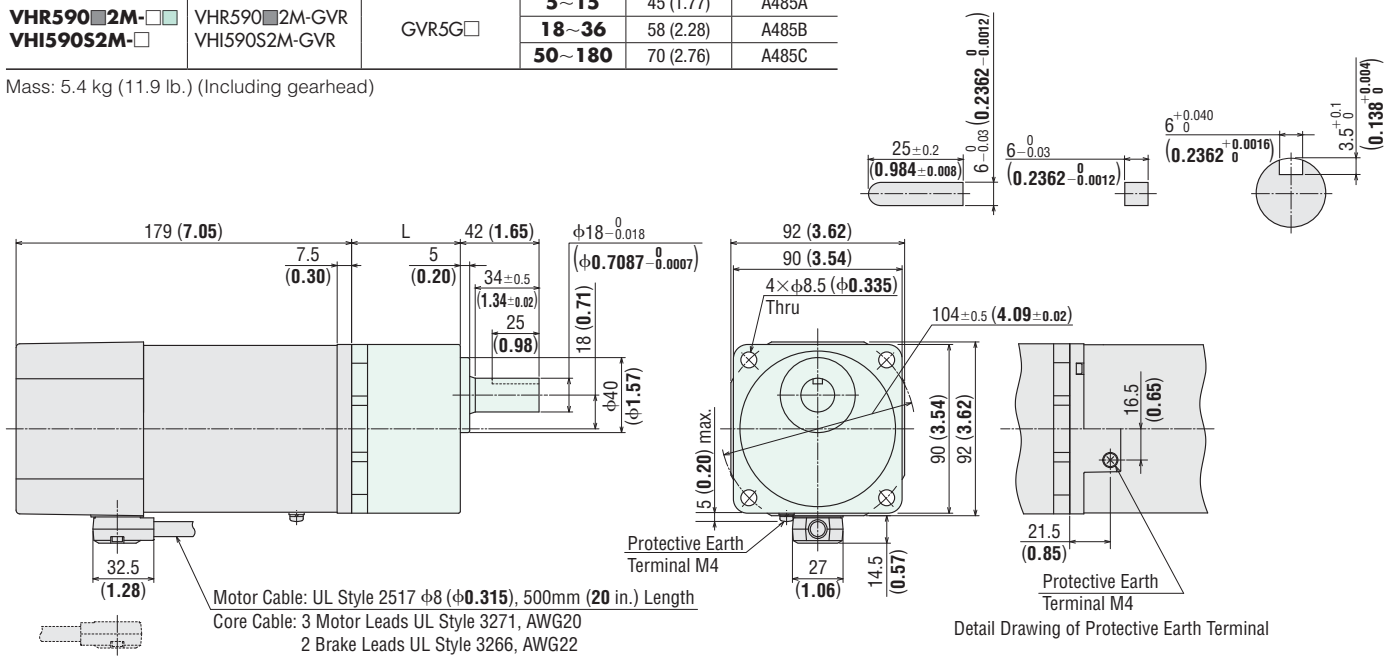
◇ Motor/Gearhead

Model	Motor Model	Gearhead Model	Gear Ratio	L	DXF
VHR590■2M-□□	VHR590■2M-GVR	GVR5G□	5~15	45 (1.77)	A485A
VHI590S2M-□	VHI590S2M-GVR		18~36	58 (2.28)	A485B
			50~180	70 (2.76)	A485C

Mass: 5.4 kg (11.9 lb.) (Including gearhead)

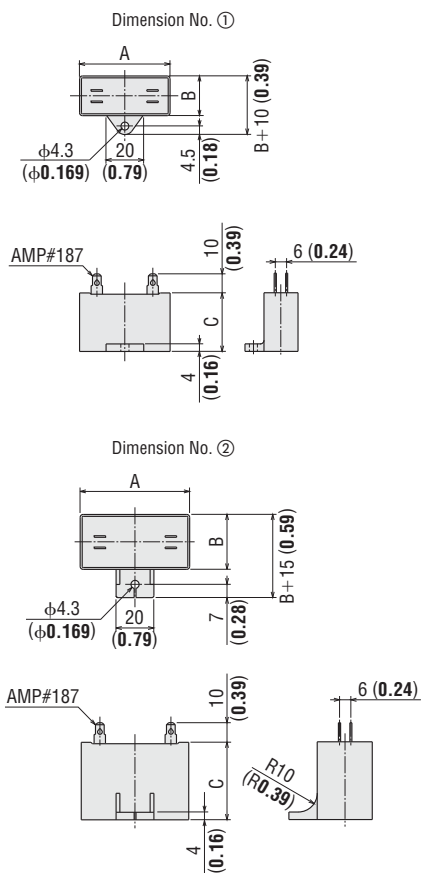
◇ Key and Key Slot

(The key is included with the gearhead)



- Enter the power supply voltage (A or C) in the box (■) within the model name.
- Enter the gear ratio in the box (□) within the model name.
- Enter the type of the capacitor (U or E) in the box (□) within the model name.

● Capacitor (Included with single-phase motors)



● Capacitor Dimensions Unit = mm (in.)

Model	Capacitor Model	A	B	C	Mass (oz.)	Dimension No.
VHR206A2M-□U	CH35FAUL2	31 (1.22)	17 (0.67)	27 (1.06)	22 (0.78)	①
VHR206C2M-□E	CH08BFAUL	31 (1.22)	17 (0.67)	27 (1.06)	23 (0.81)	
VHR315A2M-□U	CH60CFAUL2	38 (1.50)	21 (0.83)	31 (1.22)	35 (1.24)	
VHR315C2M-□E	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	37 (1.31)	
VHR425A2M-□U	CH80CFAUL2	48 (1.89)	21 (0.83)	31 (1.22)	41 (1.45)	
VHR425C2M-□E	CH20BFAUL	48 (1.89)	19 (0.75)	29 (1.14)	36 (1.27)	
VHR540A2M-□U	CH120CFAUL2	58 (2.28)	22 (0.87)	35 (1.38)	60 (2.1)	②
VHR540C2M-□E	CH35BFAUL	58 (2.28)	22 (0.87)	35 (1.38)	59 (2.1)	
VHR560A2M-□U	CH200CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	91 (3.2)	
VHR560C2M-□E	CH50BFAUL	58 (2.28)	29 (1.14)	41 (1.61)	93 (3.3)	
VHR590A2M-□U	CH300CFAUL2	58 (2.28)	35 (1.38)	50 (1.97)	140 (4.9)	
VHR590C2M-□E	CH70BFAUL	58 (2.28)	35 (1.38)	50 (1.97)	138 (4.9)	

- A capacitor cap is included with a capacitor.
- Enter the gear ratio in the box (□) within the model name.

■ Motor and Gearhead Combinations

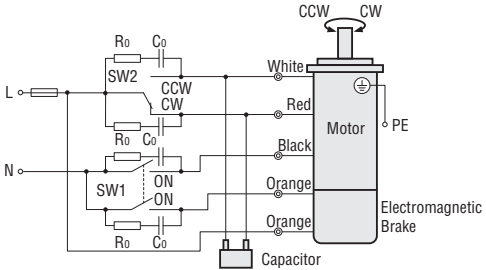
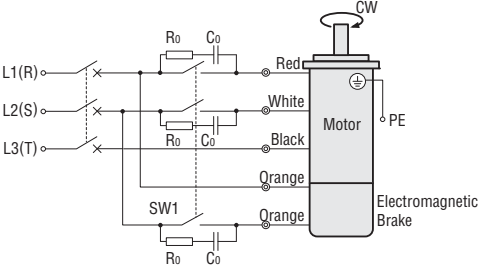
Motor and gearhead combinations are shown below.

Model	Motor Model	Gearhead Model
VHR206A2M-□U	VHR206A2M-GV	GV2G□
VHR206C2M-□E	VHR206C2M-GV	
VHR315A2M-□U	VHR315A2M-GV	GV3G□
VHR315C2M-□E	VHR315C2M-GV	
VHR425A2M-□U	VHR425A2M-GV	GV4G□
VHR425C2M-□E	VHR425C2M-GV	
VHI425S2M-□	VHI425S2M-GV	GVH5G□
VHR540A2M-□U	VHR540A2M-GVH	
VHR540C2M-□E	VHR540C2M-GVH	GVH5G□
VHI540S2M-□	VHI540S2M-GVH	
VHR560A2M-□U	VHR560A2M-GVH	GVH5G□
VHR560C2M-□E	VHR560C2M-GVH	
VHI560S2M-□	VHI560S2M-GVH	GVR5G□
VHR590A2M-□U	VHR590A2M-GVR	
VHR590C2M-□E	VHR590C2M-GVR	GVR5G□
VHI590S2M-□	VHI590S2M-GVR	

- Enter the gear ratio in the box (□) within the model name.

Connection Diagrams

- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- The direction of gearhead shaft rotation may differ from motor shaft rotation depending on the gear ratio of the gearhead. Refer to the gearmotor – torque table for the rotation direction.

<p>Single-Phase 110/115 VAC Single-Phase 220/230 VAC</p>	 <p>The diagram shows a single-phase AC input (L and N) connected to a motor and an electromagnetic brake. The motor has three main leads: White, Red, and Black. The electromagnetic brake has two orange leads. A capacitor is connected between the two orange leads. Two switches, SW1 and SW2, are used for control. SW1 is a double-throw switch that controls both the motor and the brake. SW2 is a selector switch for rotation direction, with positions for CCW and CW. Surge suppression components (R0 and C0) are connected to the input lines.</p>	<p>SW1 operates both motor and electromagnetic brake action. The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.</p> <p>If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (orange).</p> <p>Rotation Direction To rotate the motor in a clockwise (CW) direction, turn SW2 to CW. To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Switch No.</th> <th colspan="2">Specifications</th> <th rowspan="2">Note</th> </tr> <tr> <th>Single-Phase 110/115 VAC Input</th> <th>Single-Phase 220/230 VAC Input</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>125 VAC 3 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 5 A minimum] (Inductive Load)</td> <td>250 VAC 1.5 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 5 A minimum] (Inductive Load)</td> <td>Switched Simultaneously</td> </tr> <tr> <td>SW2</td> <td></td> <td></td> <td style="text-align: center;">-</td> </tr> </tbody> </table>	Switch No.	Specifications		Note	Single-Phase 110/115 VAC Input	Single-Phase 220/230 VAC Input	SW1	125 VAC 3 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 5 A minimum] (Inductive Load)	250 VAC 1.5 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 5 A minimum] (Inductive Load)	Switched Simultaneously	SW2			-
Switch No.	Specifications			Note												
	Single-Phase 110/115 VAC Input	Single-Phase 220/230 VAC Input														
SW1	125 VAC 3 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 5 A minimum] (Inductive Load)	250 VAC 1.5 A minimum [40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 5 A minimum] (Inductive Load)	Switched Simultaneously													
SW2			-													
<p>Three-Phase 200/220/230 VAC</p>	 <p>The diagram shows a three-phase AC input (L1(R), L2(S), L3(T)) connected to a motor and an electromagnetic brake. The motor has three main leads: Red, White, and Black. The electromagnetic brake has two orange leads. A capacitor is connected between the two orange leads. A single switch, SW1, controls both the motor and the brake. Surge suppression components (R0 and C0) are connected to each input line.</p>	<p>SW1 operates both motor and electromagnetic brake action. The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.</p> <p>If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (orange).</p> <p>Rotation Direction To change the rotation direction, change any two connections between L1 (R), L2 (S) and L3 (T).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Switch No.</th> <th>Specifications</th> <th>Note</th> </tr> </thead> <tbody> <tr> <td>SW1</td> <td>6 W (1/125 HP), 25 W (1/30 HP): 250 VAC 1.5 A minimum 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 250 VAC 5 A minimum (Inductive Load)</td> <td>Switched Simultaneously</td> </tr> </tbody> </table>	Switch No.	Specifications	Note	SW1	6 W (1/125 HP), 25 W (1/30 HP): 250 VAC 1.5 A minimum 40 W (1/19 HP), 60 W (1/12 HP), 90 W (1/8 HP): 250 VAC 5 A minimum (Inductive Load)	Switched Simultaneously								
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PE: Protective Earth

● R₀ and C₀ indicate CR circuit for surge suppression. [R₀ = 5~200 Ω, C₀ = 0.1~0.2 μF, 200 WV (400 WV)]

● EPCR1201-2 (CR circuit) is available as an accessory. → Page A-302

● How to connect a capacitor → Page A-313