

RoHS RoHS-Compliant

Watertight, Dust-Resistant Motors

FPW Series



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Induction Type



The **FPW** Series are geared motors which conform to the IEC standard IP67 (Recognized by UL). They are ideal for applications where they are splashed with water.

These watertight motors are available in 25 W (1/30 HP), 40 W (1/19 HP), 60 W (1/12 HP) and 90 W (1/8 HP) models, and conform to the RoHS Directive.



Features

● Watertight and Dust-Resistant Performance IP67

The **FPW** Series motors are watertight, dust-resistant geared induction motors which conform to the IEC standard IP67.

They can be used where they are splashed with water.

*Not available for use under high pressure jets of water or immersion in water

IP67: The letters "IP" stand for "Ingress Protection" and are followed by two numerical digits which indicate degrees of protection against solid objects and moisture. Specified with IEC 60529 and IEC 60034-5.

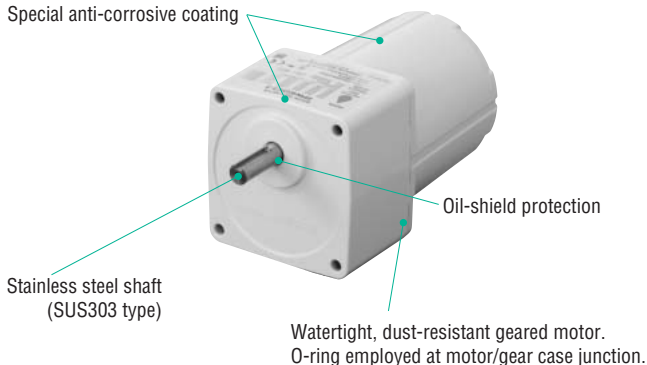
FPW Series IP67 protection are UL recognized (UL File No.E166348).

● Superb Anti-Corrosion Properties

High corrosion resistance is achieved through special anti-corrosive coating and re-examination of shaft material [stainless steel (SUS303 type)].

● Designed and Constructed for Dust and Water-Resistance

Special anti-corrosive coating



● Conform to Safety Standards

The **FPW** Series is recognized by UL/CSA standards and conforms to EN standards. CE marking is used in accordance with the low voltage directive. These motors are also certified under the China Compulsory Certification (CCC) System.

● **RoHS** RoHS-Compliant

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

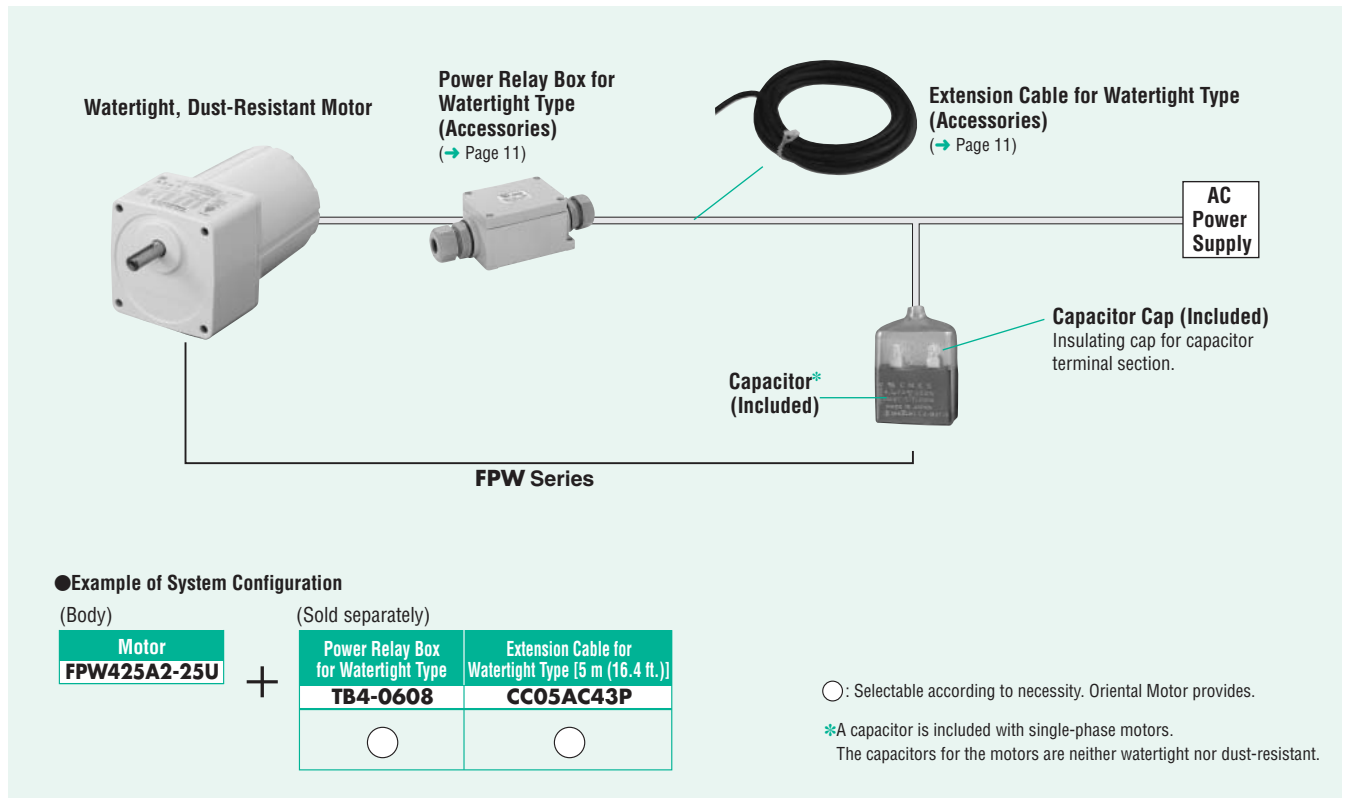
RoHS (Restriction of Hazardous Substances) Directive:
 Directive on restriction of the use of certain hazardous substances in electrical and electronic equipment (2002/95/EC).
 The RoHS Directive prohibits the use of six chemical substances in electrical and electronic products sold in the E.U. member countries on or after July 1, 2006. The six controlled substances are: lead, hexavalent chromium, cadmium, mercury and two specific brominated flame-retardants (PBB and PBDE).

Safety Standards and CE Marking

Standards	Certification Body	Standards File No.	CE Marking
UL 1004 UL 2111	UL	E64197	Low Voltage Directives
CSA C22.2 No.100 CSA C22.2 No.77			
EN 60034-1 EN 60034-5 IEC 60664-1	Conform to EN/IEC Standards		
GB 12350	CQC	2006010401173413 [Single-Phase 25 W (1/30 HP) – 90 W (1/8 HP)] 2006010401173412 [Three-Phase 25W (1/30 HP) – 90 W (1/8 HP)]	

● When the motor is approved under various standards, the model name on the nameplate is the approved model name.

System Configuration



●The system configuration shown above is an example. Other configurations are available.

Product Number Code

FPW 4 25 A 2 - 15 U

① ② ③ ④ ⑤ ⑥ ⑦

①	Series	FPW: FPW Series
②	Motor Frame Size	4: 80 mm (3.15 in.) 5: 90 mm (3.54 in.) 6: 104 mm (4.09 in.)
③	Output Power (W)	(Example) 25: 25 W (1/30 HP)
④	Power Supply Voltage	A: Single-Phase 110/115 VAC C: Single-Phase 220/230 VAC S: Three-Phase 200/220/230 VAC
⑤	RoHS-Compliant	2: RoHS-Compliant
⑥	Gear Ratio	
⑦	Included Capacitor	U: For Single-Phase 110/115 VAC E: For Single-Phase 220/230 VAC

● 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 standards, the model name on the nameplate is the approved model name.

(Example) Model: **FPW425A2-15U**

→ Motor nameplate and product approved under various safety standards: **FPW425A2-15**













Product Line (RoHS)

Output Power	Power Supply Voltage	Model	Gear Ratio
25 W (1/30 HP)	Single-Phase 110/115 VAC	FPW425A2-□U	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Single-Phase 220/230 VAC	FPW425C2-□E	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Three-Phase 200/220/230 VAC	FPW425S2-□	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
40 W (1/19 HP)	Single-Phase 110/115 VAC	FPW540A2-□U	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Single-Phase 220/230 VAC	FPW540C2-□E	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Three-Phase 200/220/230 VAC	FPW540S2-□	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
60 W (1/12 HP)	Single-Phase 110/115 VAC	FPW560A2-□U	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Single-Phase 220/230 VAC	FPW560C2-□E	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Three-Phase 200/220/230 VAC	FPW560S2-□	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
90 W (1/8 HP)	Single-Phase 110/115 VAC	FPW690A2-□U	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Single-Phase 220/230 VAC	FPW690C2-□E	3, 3.6, 5, 6, 7.5, 9, 12.5, 15, 18, 25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180
	Three-Phase 200/220/230 VAC	FPW690S2-□	3, 3.6, 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 – Continuous Rating



Model	Output Power		Voltage VAC	Frequency Hz	Current A	Starting Torque		Rated Torque		Rated Speed r/min	Capacitor μ F
	W	HP				mN·m	oz-in	mN·m	oz-in		
 FPW425A2-□U	25	1/30	Single-Phase 110	60	0.46	120	17	170	24	1450	6.5
			Single-Phase 115								
 FPW425C2-□E	25	1/30	Single-Phase 220	50	0.27	110	15	205	29	1200	1.5
				60	0.23			170	24	1450	
			Single-Phase 230	50	0.27	120	17	205	29	1200	
				60	0.23			170	24	1450	
 FPW425S2-□	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	0.21	160	22	160	22	1600	
			Three-Phase 230		0.22						
 FPW540A2-□U	40	1/19	Single-Phase 110	60	0.68	200	28	260	36	1500	9.0
			Single-Phase 115		0.67						
 FPW540C2-□E	40	1/19	Single-Phase 220	50	0.39	200	28	315	44	1250	2.3
				60	0.35			260	36	1500	
			Single-Phase 230	50	0.39			300	42	1300	
				60	0.34			260	36	1500	
 FPW540S2-□	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	0.30	260	36	260	36	1600	
			Three-Phase 230		0.31						
 FPW560A2-□U	60	1/12	Single-Phase 110	60	1.04	300	42	405	57	1450	12
			Single-Phase 115		1.02						
 FPW560C2-□E	55	1/14	Single-Phase 220	50	0.52	300	42	430	61	1250	3.0
	60	1/12		60	0.48			405	57	1450	
	55	1/14	Single-Phase 230	50	0.51			430	61	1250	
	60	1/12		60	0.47			405	57	1450	
 FPW560S2-□	60	1/12	Three-Phase 200	50	0.48	600	85	450	63	1300	-
				60	0.43	500	71	380	53	1550	
			Three-Phase 220	60	0.44	500	71	380	53	1600	
			Three-Phase 230		0.45						
 FPW690A2-□U	90	1/8	Single-Phase 110	60	1.54	400	56	585	83	1500	18
			Single-Phase 115		1.51						
 FPW690C2-□E	90	1/8	Single-Phase 220	50	0.82	400	56	700	99	1250	4.5
				60	0.73			605	85	1450	
			Single-Phase 230	50	0.81			700	99	1250	
				60	0.71			605	85	1450	
 FPW690S2-□	90	1/8	Three-Phase 200	50	0.54	700	99	680	96	1300	-
				60	0.51	570	80	1550			
			Three-Phase 220	60	0.50	700	99	570	80	1600	
			Three-Phase 230		0.49						

 : Contains a built-in thermal protector. If a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

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

● The value for each specification is for the motor only.

General Specifications

Item	Specifications
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kV at 50 Hz or 60 Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	80°C (144°F) or less [Three-phase type: 70°C (126°F) or less] measured by the resistance change method after rated motor operation under normal ambient temperature and humidity.
Insulation Class	Class B [130°C (266°F)]
Overheat Protection	Built-in thermal protector (automatic return type) Operating temperature; open: 130°C±5°C (266°F±9°F), close: 82°C±15°C (179.6°F±27°F)
Ambient Temperature	Three-Phase 200 VAC: -10°C~+50°C (+14°F~+122°F) (nonfreezing) Single-Phase 110/115 VAC, Single-Phase 220/230 VAC, Three-Phase 220/230 VAC: -10°C~+40°C (+14°F~+104°F) (nonfreezing)
Degree of Protection	IP67

Notes:

- Since these are special watertight, dust-resistant geared motors, the motor and gearhead sections cannot be disassembled.
- The capacitors for the motors are neither watertight nor dust-resistant.

Gearmotor – Torque Table

50 Hz

Unit = Upper value: N·m/Lower value: lb·in

Model	Speed r/min	500	417	300	250	200	167	120	100	83	60	50	42	30	25	20	17	15	12.5	10	8.3
		Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150
FPW425C2-□E (220 VAC)	Rated Torque	0.50 4.4	0.60 5.3	0.83 7.3	1.0 8.8	1.2 10.6	1.5 13.2	2.1 18.5	2.5 22	3.0 26	3.7 32	4.5 39	5.4 47	6.8 60	8 70	8 70	8 70	8 70	8 70	8 70	8 70
	Starting Torque	0.27 2.3	0.32 2.8	0.45 3.9	0.53 4.6	0.67 5.9	0.80 7.0	1.1 9.7	1.3 11.5	1.6 14.1	2.0 17.7	2.4 21	2.9 25	3.6 31	4.4 38	5.4 47	6.5 57	7.3 64	8 70	8 70	8 70
FPW425C2-□E (230 VAC)	Rated Torque	0.50 4.4	0.60 5.3	0.83 7.3	1.0 8.8	1.2 10.6	1.5 13.2	2.1 18.5	2.5 22	3.0 26	3.7 32	4.5 39	5.4 47	6.8 60	8 70	8 70	8 70	8 70	8 70	8 70	8 70
	Starting Torque	0.29 2.5	0.35 3.0	0.49 4.3	0.58 5.1	0.73 6.4	0.87 7.6	1.2 10.6	1.5 13.2	1.7 15	2.2 19.4	2.6 23	3.2 28	4.0 35	4.8 42	5.9 52	7.1 62	7.9 69	8 70	8 70	8 70
FPW425S2-□	Rated Torque	0.46 4.0	0.55 4.8	0.77 6.8	0.92 8.1	1.2 10.6	1.4 12.3	1.9 16.8	2.3 20	2.8 24	3.5 30	4.2 37	5.0 44	6.3 55	7.5 66	8 70	8 70	8 70	8 70	8 70	8 70
	Starting Torque	0.77 6.8	0.92 8.1	1.3 11.5	1.5 13.2	1.9 16.8	2.3 20	3.2 28	3.8 33	4.6 40	5.7 50	6.9 61	8.3 73	10 88	10 88	10 88	10 88	10 88	10 88	10 88	10 88
FPW540C2-□E (220 VAC)	Rated Torque	0.73 6.4	0.87 7.6	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	5.5 48	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88	10 88	10 88
	Starting Torque	0.49 4.3	0.58 5.1	0.81 7.1	0.97 8.5	1.2 10.6	1.5 13.2	2.0 17.7	2.4 21	2.9 25	3.7 32	4.4 38	5.3 46	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88
FPW540C2-□E (230 VAC)	Rated Torque	0.73 6.4	0.87 7.6	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	5.5 48	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88	10 88	10 88
	Starting Torque	0.49 4.3	0.58 5.1	0.81 7.1	0.97 8.5	1.2 10.6	1.5 13.2	2.0 17.7	2.4 21	2.9 25	3.7 32	4.4 38	5.3 46	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88
FPW540S2-□	Rated Torque	0.73 6.4	0.87 7.6	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	5.5 48	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88	10 88	10 88
	Starting Torque	0.73 6.4	0.87 7.6	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	5.5 48	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88	10 88	10 88
FPW560C2-□E	Rated Torque	1.0 8.8	1.3 11.5	1.7 15	2.1 18.5	2.6 23	3.1 27	3.9 34	4.7 41	5.7 50	7.1 62	8.5 75	10.2 90	14.2 125	15 132	15 132	15 132	15 132	15 132	15 132	15 132
	Starting Torque	0.73 6.4	0.87 7.6	1.2 10.6	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.3 29	3.9 34	5.0 44	5.9 52	7.1 62	9.9 87	11.9 105	13.3 117	15 132	15 132	15 132	15 132	15 132
FPW560S2-□	Rated Torque	1.1 9.7	1.3 11.5	1.8 15.9	2.2 19.4	2.7 23	3.3 29	4.1 36	4.9 43	5.9 52	7.4 65	8.9 78	10.7 94	14.9 131	15 132	15 132	15 132	15 132	15 132	15 132	15 132
	Starting Torque	1.7 15	2.0 17.7	2.8 24	3.4 30	4.3 38	5.1 45	6.4 56	7.7 68	9.2 81	12.8 113	15.3 135	18.4 162	23.1 204	27.7 240	30 260	30 260	30 260	30 260	30 260	30 260
FPW690C2-□E	Rated Torque	1.7 15	2.0 17.7	2.8 24	3.4 30	4.3 38	5.1 45	6.4 56	7.7 68	9.2 81	12.8 113	15.3 135	18.4 162	23.1 204	27.7 240	30 260	30 260	30 260	30 260	30 260	30 260
	Starting Torque	0.97 8.5	1.2 10.6	1.6 14.1	1.9 16.8	2.4 21	2.9 25	3.7 32	4.4 38	5.3 46	7.3 64	8.8 77	10.5 92	13.2 116	15.8 139	19.8 175	23.8 210	26.4 233	30 260	30 260	30 260
FPW690S2-□	Rated Torque	1.7 15	2.0 17.7	2.8 24	3.4 30	4.1 36	5.0 44	6.2 54	7.4 65	8.9 78	12.4 109	14.9 131	17.9 158	22.4 198	26.9 238	30 260	30 260	30 260	30 260	30 260	30 260
	Starting Torque	1.7 15	2.0 17.7	2.8 24	3.4 30	4.1 36	5.0 44	6.2 54	7.4 65	8.9 78	12.4 109	14.9 131	17.9 158	22.4 198	26.9 238	30 260	30 260	30 260	30 260	30 260	30 260

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

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
FPW425C2-□E (220 VAC)	Rated Torque	0.41 3.6	0.50 4.4	0.69 6.1	0.83 7.3	1.0 8.8	1.2 10.6	1.7 15	2.1 18.5	2.5 22	3.1 27	3.7 32	4.5 39	5.6 49	6.7 59	8 70	8 70	8 70	8 70	8 70	8 70
	Starting Torque	0.27 2.3	0.32 2.8	0.45 3.9	0.53 4.6	0.67 5.9	0.80 7	1.1 9.7	1.3 11.5	1.6 14.1	2.0 17.7	2.4 21	2.9 25	3.6 31	4.4 38	5.4 47	6.5 57	7.3 64	8 70	8 70	8 70
FPW425A2-□U FPW425C2-□E (230 VAC)	Rated Torque	0.41 3.6	0.50 4.4	0.69 6.1	0.83 7.3	1.0 8.8	1.2 10.6	1.7 15	2.1 18.5	2.5 22	3.1 27	3.7 32	4.5 39	5.6 49	6.7 59	8 70	8 70	8 70	8 70	8 70	8 70
	Starting Torque	0.29 2.5	0.35 3.0	0.49 4.3	0.58 5.1	0.73 6.4	0.87 7.6	1.2 10.6	1.5 13.2	1.7 15	2.2 19.4	2.6 23	3.2 28	4.0 35	4.8 42	5.9 52	7.1 62	7.9 69	8 70	8 70	8 70
FPW425S2-□	Rated Torque	0.39 3.4	0.47 4.1	0.65 5.7	0.78 6.9	0.97 8.5	1.2 10.6	1.6 14.1	1.9 16.8	2.3 20	2.9 25	3.5 30	4.2 37	5.3 46	6.3 55	7.9 69	8 70	8 70	8 70	8 70	8 70
	Starting Torque	0.63 5.5	0.76 6.7	1.1 9.7	1.3 11.5	1.6 14.1	1.9 16.8	2.6 23	3.2 28	3.8 33	4.7 41	5.7 50	6.8 60	8.6 76	10 88	10 88	10 88	10 88	10 88	10 88	10 88
FPW540A2-□U FPW540C2-□E	Rated Torque	0.63 5.5	0.76 6.7	1.1 9.7	1.3 11.5	1.6 14.1	1.9 16.8	2.6 23	3.2 28	3.8 33	4.7 41	5.7 50	6.8 60	8.6 76	10 88	10 88	10 88	10 88	10 88	10 88	10 88
	Starting Torque	0.49 4.3	0.58 5.1	0.81 7.1	0.97 8.5	1.2 10.6	1.5 13.2	2.0 17.7	2.4 21	2.9 25	3.7 32	4.4 38	5.3 46	6.6 58	7.9 69	9.9 87	10 88	10 88	10 88	10 88	10 88
FPW540S2-□	Rated Torque	0.63 5.5	0.76 6.7	1.1 9.7	1.3 11.5	1.6 14.1	1.9 16.8	2.6 23	3.2 28	3.8 33	4.7 41	5.7 50	6.8 60	8.6 76	10 88	10 88	10 88	10 88	10 88	10 88	10 88
	Starting Torque	0.98 8.6	1.2 10.6	1.6 14.1	2.0 17.7	2.5 22	3.0 26	3.7 32	4.4 38	5.3 46	6.7 59	8.0 70	9.6 84	13.4 118	15 132	15 132	15 132	15 132	15 132	15 132	15 132
FPW560A2-□U FPW560C2-□E	Rated Torque	0.98 8.6	1.2 10.6	1.6 14.1	2.0 17.7	2.5 22	3.0 26	3.7 32	4.4 38	5.3 46	6.7 59	8.0 70	9.6 84	13.4 118	15 132	15 132	15 132	15 132	15 132	15 132	15 132
	Starting Torque	0.73 6.4	0.87 7.6	1.2 10.6	1.5 13.2	1.8 15.9	2.2 19.4	2.7 23	3.3 29	3.9 34	5.0 44	5.9 52	7.1 62	9.9 87	11.9 105	13.3 117	15 132	15 132	15 132	15 132	15 132
FPW560S2-□	Rated Torque	0.92 8.1	1.1 9.7	1.5 13.2	1.8 15.9	2.3 20	2.8 24	3.5 30	4.2 37	5.0 44	6.3 55	7.5 66	9.0 79	12.5 110	15 132	15 132	15 132	15 132	15 132	15 132	15 132
	Starting Torque	1.4 12.3	1.7 15	2.4 21	2.8 24	3.6 31	4.3 38	5.3 46	6.4 56	7.7 68	10.7 94	12.8 113	15.4 136	19.3 170	23.2 200	29.0 256	30 260	30 260	30 260	30 260	30 260
FPW690A2-□U	Rated Torque	1.4 12.3	1.7 15	2.4 21	2.8 24	3.6 31	4.3 38	5.3 46	6.4 56	7.7 68	10.7 94	12.8 113	15.4 136	19.3 170	23.2 200	29.0 256	30 260	30 260	30 260	30 260	30 260
	Starting Torque	0.97 8.5	1.2 10.6	1.6 14.1	1.9 16.8	2.4 21	2.9 25	3.7 32	4.4 38	5.3 46	6.7 59	8.0 70	9.6 84	13.4 118	15 132	15 132	15 132	15 132	15 132	15 132	15 132
FPW690C2-□E	Rated Torque	1.5 13.2	1.8 15.9	2.5 22	2.9 25	3.7 32	4.4 38	5.5 48	6.6 58	7.9 69	11.0 97	13.2 116	15.9 140	20.0 177	24.0 210	29.9 264	30 260	30 260	30 260	30 260	30 260
	Starting Torque	0.97 8.5	1.2 10.6	1.6 14.1	1.9 16.8	2.4 21	2.9 25	3.7 32	4.4 38	5.3 46	6.7 59	8.0 70	9.6 84	13.4 118	15 132	15 132	15 132	15 132	15 132	15 132	15 132
FPW690S2-□	Rated Torque	1.4 12.3	1.7 15	2.3 20	2.8 24	3.5 30	4.2 37	5.2 46	6.2 54	7.5 66	10.4 92	12.5 110	15.0 132	18.8 166	22.6 200	28.2 249	30 260	30 260	30 260	30 260	30 260
	Starting Torque	1.4 12.3	1.7 15	2.3 20	2.8 24	3.5 30	4.2 37	5.2 46	6.2 54	7.5 66	10.4 92	12.5 110	15.0 132	18.8 166	22.6 200	28.2 249	30 260	30 260	30 260	30 260	30 260

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

Permissible Overhung Load and Permissible Thrust Load

Model	Gear Ratio	Permissible Overhung Load				Permissible Thrust Load	
		10 mm (0.39 in.) from Shaft End		20 mm (0.79 in.) from Shaft End		N	lb.
		N	lb.	N	lb.		
FPW425 Type	3~18	100	22	150	33	50	11.2
	25~180	200	45	300	67		
FPW540 Type	3~18	250	56	350	78	100	22
	25~180	300	67	450	101		
FPW560 Type	3~9	400	90	500	112	150	33
	12.5~18	450	101	600	135		
FPW690 Type	3~9	550	123	800	180	200	45
	12.5~180	650	146	1000	220		

Permissible Load Inertia J

Unit = Upper value: $\times 10^{-4}$ kg·m²/Lower value: oz-in²

Model	Gear Ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
FPW425 Type	Upper	2.79	4.02	7.75	11.2	17.4	25.1	48.4	69.8	100	194	279	402	775	775	775	775	775	775	775	775
	Lower	15.3	22	42	61	95	137	265	380	550	1060	1530	2200	4200	4200	4200	4200	4200	4200	4200	4200
FPW540 Type	Upper	6.75	9.72	18.8	27	42.2	60.8	117	169	243	469	675	972	1875	1875	1875	1875	1875	1875	1875	1875
	Lower	37	53	103	148	230	330	640	920	1330	2600	3700	5300	10300	10300	10300	10300	10300	10300	10300	10300
FPW560 Type	Upper	9.9	14.3	27.5	39.6	61.9	89.1	172	248	356	688	990	1426	2750	2750	2750	2750	2750	2750	2750	2750
	Lower	54	78	150	220	340	490	940	1360	1950	3800	5400	7800	15000	15000	15000	15000	15000	15000	15000	15000
FPW690 Type	Upper	18	25.9	50	72	113	162	313	450	648	1250	1800	2592	5000	5000	5000	5000	5000	5000	5000	5000
	Lower	98	142	270	390	620	890	1710	2500	3500	6800	9800	14200	27000	27000	27000	27000	27000	27000	27000	27000

Dimensions Unit = mm (inch)

- Mounting screws are included with the motor. Dimensions for screws → Page 9
- Enter the gear ratio in the box (□) within the model name.

● 25 W

◇ Geared Motors

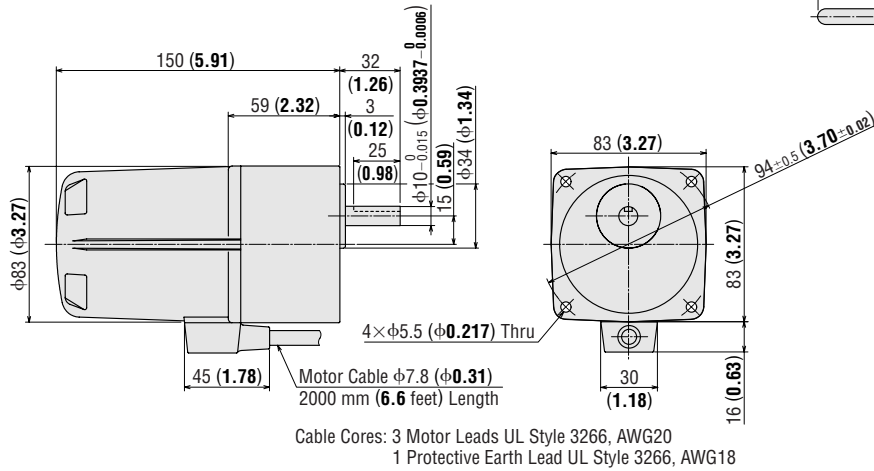
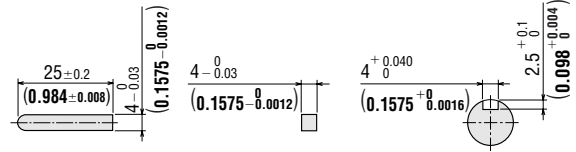
FPW425A2-□U, FPW425C2-□E, FPW425S2-□

Motor: FPW425A2-□, FPW425C2-□, FPW425S2-□

Mass: 3.0 kg (6.6 lb.)

CAD A226

◇ Key and Key Slot (Included)



● 40 W

◇ Geared Motors

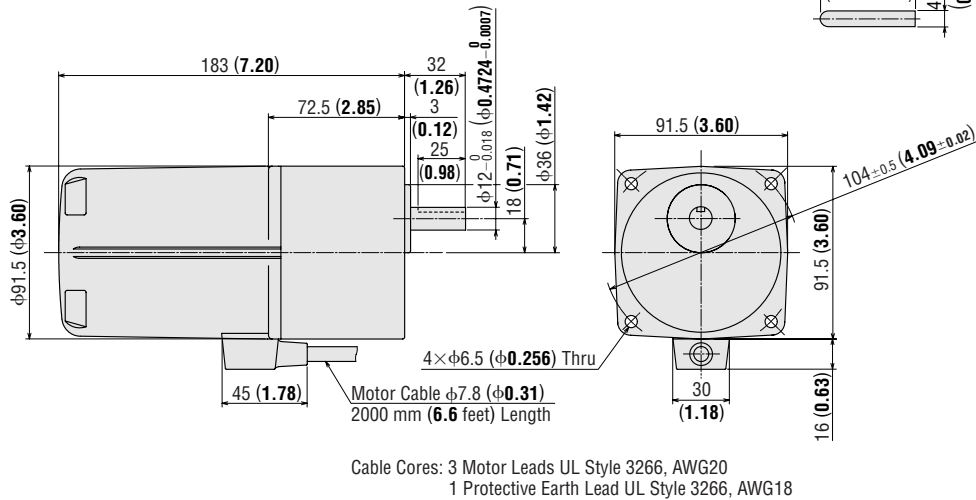
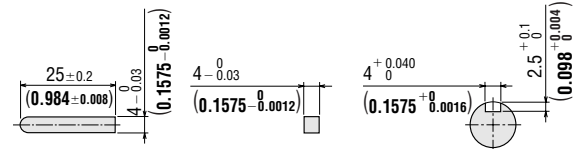
FPW540A2-□U, FPW540C2-□E, FPW540S2-□

Motor: FPW540A2-□, FPW540C2-□, FPW540S2-□

Mass: 4.0 kg (8.8 lb.)

CAD A227

◇ Key and Key Slot (Included)



● 60 W

◇ Geared Motors

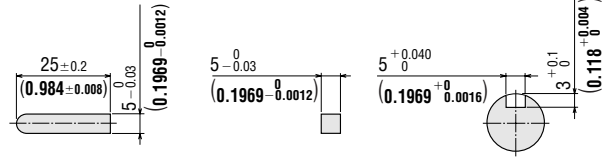
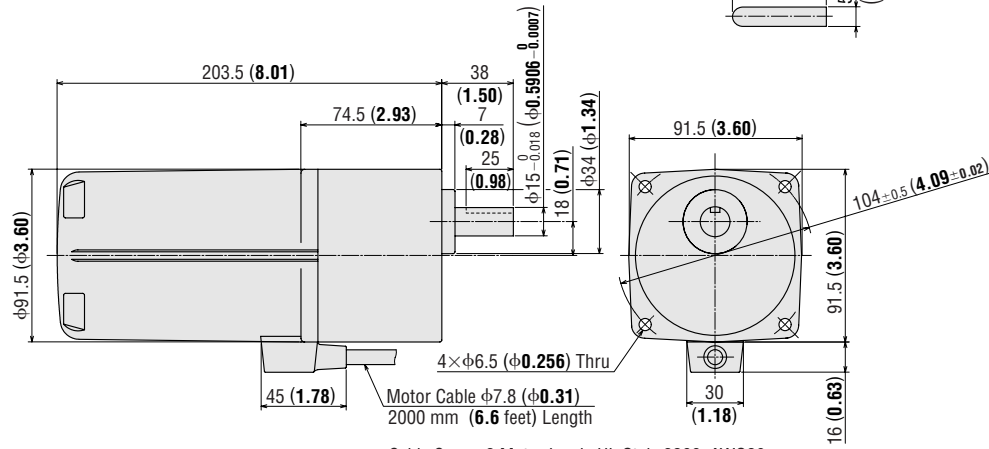
FPW560A2-□U, FPW560C2-□E, FPW560S2-□

Motor: FPW560A2-□, FPW560C2-□, FPW560S2-□

Mass: 5.0 kg (11 lb.)

CAD A228

◇ Key and Key Slot (Included)



● 90 W

◇ Geared Motors

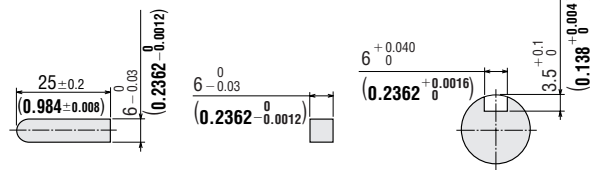
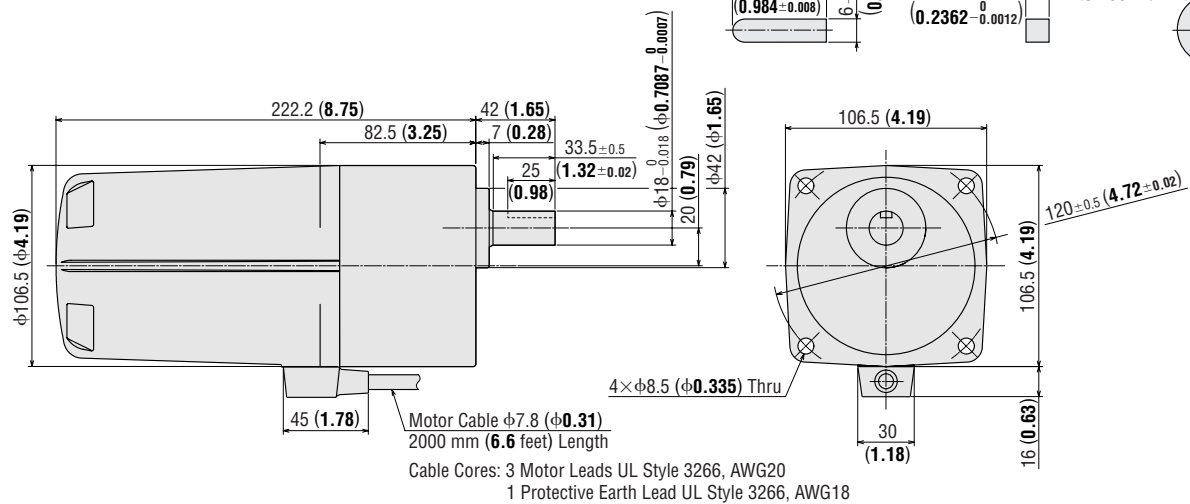
FPW690A2-□U, FPW690C2-□E, FPW690S2-□

Motor: FPW690A2-□, FPW690C2-□, FPW690S2-□

Mass: 7.5 kg (16.5 lb.)

CAD A256

◇ Key and Key Slot (Included)



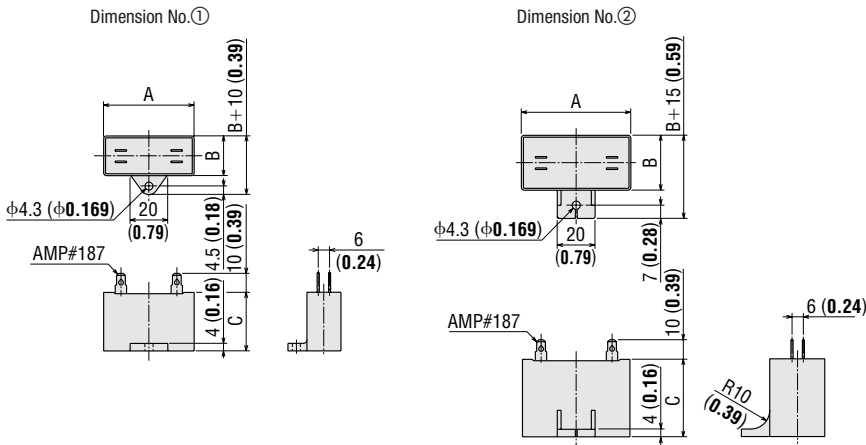
◇ Screws (Included) (Material: Stainless Steel)



	Length: L mm (inch)	Screw Size
FPW425 Type	80 (3.15)	M5 P0.8
FPW540 Type	90 (3.54)	M6 P1.0
FPW560 Type	90 (3.54)	M6 P1.0
FPW690 Type	100 (3.94)	M8 P1.25

● 4 flat washers and 4 hexagonal nuts are provided with the screws.

◇ Capacitor (Included with single-phase motors)



◇ Capacitor Dimensions

Unit = mm (inch)

Model	Capacitor Model	A	B	C	Mass g (oz.)	Dimension No.
FPW425A2-□U	CH65CFAUL2	48 (1.89)	19 (0.75)	29 (1.14)	40 (1.41)	①
FPW425C2-□E	CH15BFAUL	38 (1.50)	21 (0.83)	31 (1.22)	35 (1.24)	①
FPW540A2-□U	CH90CFAUL2	48 (1.89)	22.5 (0.89)	31.5 (1.24)	45 (1.59)	①
FPW540C2-□E	CH23BFAUL	48 (1.89)	21 (0.83)	31 (1.22)	40 (1.41)	①
FPW560A2-□U	CH120CFAUL2	58 (2.28)	22 (0.87)	35 (1.38)	60 (2.1)	①
FPW560C2-□E	CH30BFAUL	58 (2.28)	21 (0.83)	31 (1.22)	50 (1.77)	①
FPW690A2-□U	CH180CFAUL2	58 (2.28)	29 (1.14)	41 (1.61)	95 (3.4)	②
FPW690C2-□E	CH45BFAUL	58 (2.28)	23.5 (0.93)	37 (1.46)	73 (2.6)	②

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

■ Connection and Operation

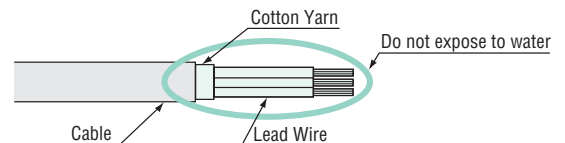
- The direction of motor rotation is as viewed from the shaft end of the motor. CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- The connection method varies with the output power or the gear ratio.
- For added safety, it is advisable to use a ground fault interrupt circuit in situations where the motor is likely to get wet during operation.

	Single-Phase 110/115 VAC, Single-Phase 220/230 VAC		Three-Phase 200/220/230 VAC	
25 W (1/30 HP)	Gear Ratio 3~18	Gear Ratio 25~36	Gear Ratio 3~18	Gear Ratio 25~36
40 W (1/19 HP)	Gear Ratio 50~180		Gear Ratio 50~180	Gear Ratio 25~36
60 W (1/12 HP)	Gear Ratio 3~9	Gear Ratio 12.5~18	Gear Ratio 3~9	Gear Ratio 12.5~18
	Gear Ratio 25~60	Gear Ratio 75~180	Gear Ratio 25~60	Gear Ratio 75~180
90 W (1/8 HP)	Gear Ratio 3~9	Gear Ratio 12.5~36	Gear Ratio 3~9	Gear Ratio 12.5~36
	Gear Ratio 50~180		Gear Ratio 50~180	
	Clockwise 	Clockwise 	Clockwise 	Clockwise
	Counterclockwise 	Counterclockwise 	Counterclockwise To rotate the motor in a counterclockwise direction, change any two connections between R, S and T.	Counterclockwise To rotate the motor in a counterclockwise direction, change any two connections between R, S and T.

- 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, the motor may ignore reversing command or change its direction of rotation after some delay.

Wiring precautions:

The terminals of the cable are not waterproofed. Be sure not to splash water on the cable terminal, otherwise water could seep inside the motor through the lead wire or the fabric covering, resulting in damage to the motor.



Accessories

Power Relay Box for Watertight Type Motors (RoHS)

This power relay box connects the motor cable and the extension cable. Use this relay box when extending the motor cable of the **FPW** Series.

● Model: **TB4-0608** (4-Terminal Type)

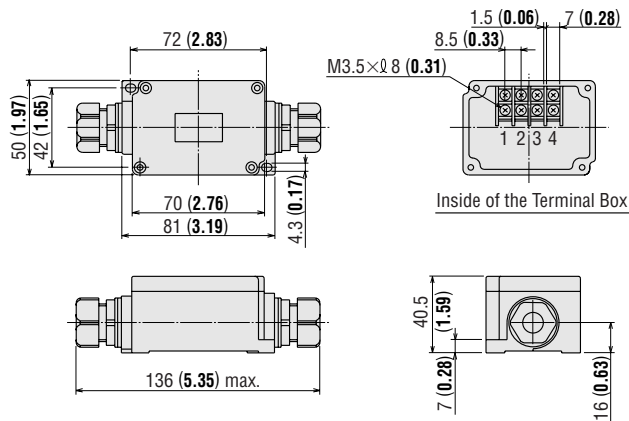


● The relay box conforms to the protection level IP65 only when used with a watertight extension cable for an **FPW** Series motor. The screws for the cover on the sealed connector and relay box should be adjusted to the torque shown below.

- Sealed connector 1.0~1.5 N·m (8.8~13.2 lb-in)
- Cover of power relay box 0.54~0.66 N·m (4.7~5.8 lb-in)

● Dimensions Unit = mm (inch)

Mass: 150 g (5.3 oz.) CAD A241



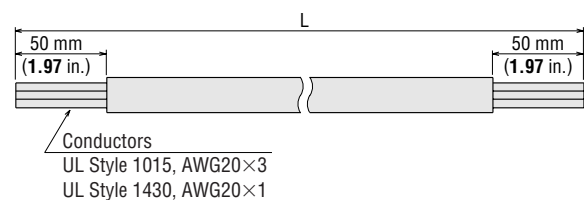
● Applicable cable diameter: $\phi 6.5$ mm ($\phi 0.26$ in.)~ $\phi 8.5$ mm ($\phi 0.33$ in.)

Extension Cable for Watertight Type Motors (RoHS)

Use this cable to extend the wiring length of the **FPW** Series motors.

Use with the power relay box for watertight motors. An extension of 5 m (16.4 ft.) and 10 m (32.8 ft.) is possible.

Model	Cable Length: L m (ft.)
CC05AC43P	5 (16.4)
CC10AC43P	10 (32.8)



● Specifications

Conductor construction: Refer to the dimension on the right

Finished outer diameter: $\phi 7.8$ mm ($\phi 0.31$ in.)

Outer casing: Heat-resistant vinyl chloride

Brake Pack for Standard AC Motors SB50W (RoHS)

The **SB50W** provides instantaneous stop, forward/reverse operation, electromagnetic brake control and thermal protector open detection functions integrated into one unit. These brake packs can sense when the thermal protector is opened, further ensuring the safety of your equipment.

● For further information on this product, please contact your nearest Oriental Motor.

Note:

● **SB50W** is not IP67.



This product is manufactured at a plant certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** (for systems of environmental management).

Specifications are subject to change without notice.
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ORIENTAL MOTOR U.S.A. CORP.

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Technical Support

Tel: (800) 468-3982 / 7:30 a.m. to 5:00 p.m., P.S.T. (M-F)

E-mail: techsupport@orientalmotor.com

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