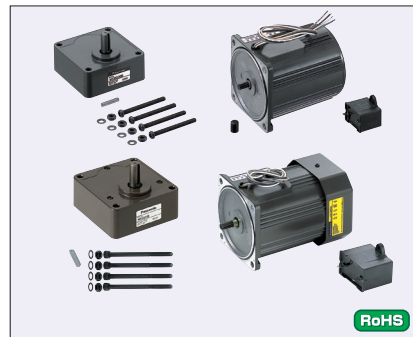


# Small Geared Motors / Gear Heads

## Induction Motors / Reversible Motors

■ Features Induction Motor: Motor suitable for continuous one-way direction operations. Reversible Motor: Motor capable of instantaneous rotation reversals.



Type		
Motor	Reversible	Gear Heads
Induction (Single-phase) PACMS	PACMR	(40W or lower) PACMGX
(3-Phase) PACMT		(60W or higher) PACMGZ

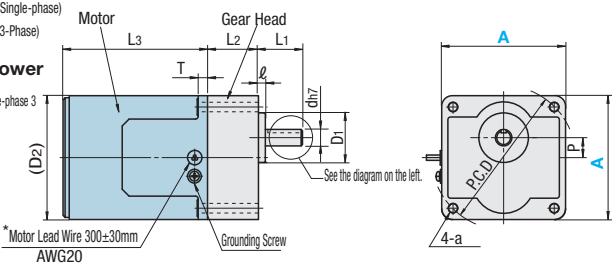
Accessory	
Motor	Capacitor (Not available for 3-Phase Motor)
Gear Heads	Key (Not available for A60) Screws, Nuts, Washers (4 each)

### Induction Motor

PACMS (Single-phase)  
PACMT (3-Phase)

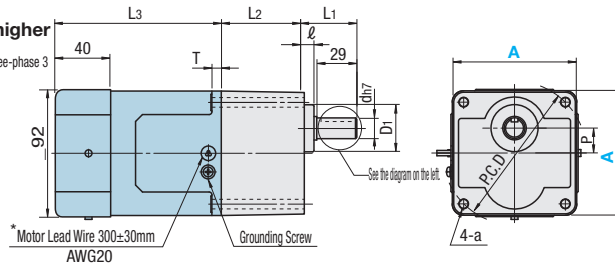
• 40W or lower

\*Motor Leads:  
Single-phase 4, Three-phase 3



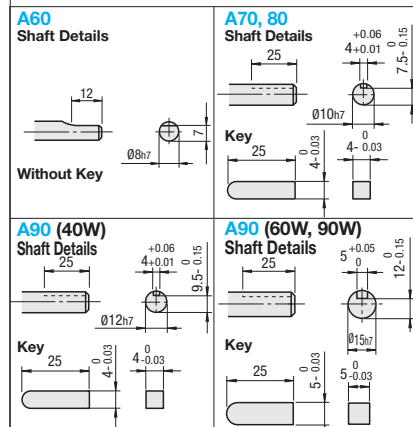
• 60W or higher

\*Motor Leads:  
Single-phase 4, Three-phase 3



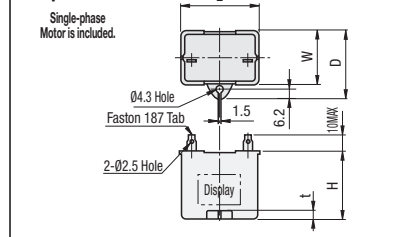
### Gear Heads

PACMGX (for Motor Output 40W or lower)  
PACMGZ (for Motor Output 60W or higher)



### Capacitor

Single-phase Motor is included.

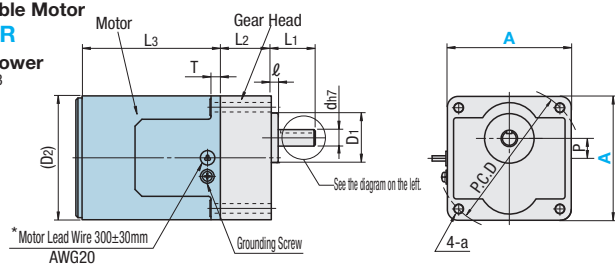


### Reversible Motor

PACMR

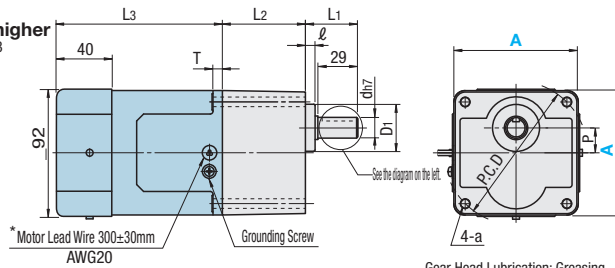
• 40W or lower

\*Motor Leads: 3



• 60W or higher

\*Motor Leads: 3



⚡ Rated Life (When used for 8hrs./day at a constant load such as belt conveyors)

• Induction Motor: 10,000 hours

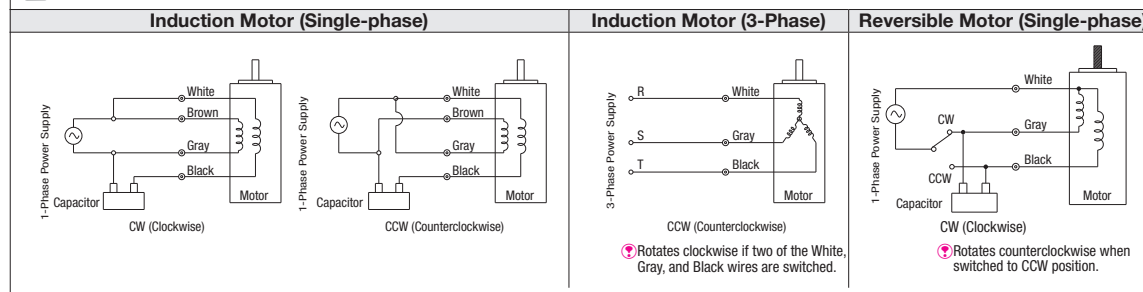
• Reversible Motor: 5,000 hours

⚙ For motor brackets, see P.1115

⚙ Seal Connector Type PACMSK, PACMTK, and PACMRK are available on our website.

⚙ For transportation, installation, assembly, wiring, operating, and maintenances of motors, see the included manual.

### Connection Diagram



### Induction Motors / Reversible Motors

Part Number	Output (W)	Voltage (V)	d	D1	L1	L2 <sup>*2</sup>	L3	l	T	(D2)	P	a	P.C.D	Mass (kg) *2		Unit Price				
														Motor	Gear Heads	Induction	Reversible			
PACMS PACMT PACMR	60	6	8	25		26 (33)	75	6		65	10	4.5	70	0.67	-	0.24 (0.3)				
	70	15	10	30	32	30 (36)	80	5	7	74	15	5.5	82	1.1	-	0.38 (0.45)				
	80	25	12	36		30	85	6		86				94	1.5	1.8	0.6			
90	40	15	34	38	60	120	7	7.5		95	18	6.5	104	2.4	2.8	0.8				
	60													2.7	3.0	1.4				
	90					135								3.2	3.3	1.4				

\*1. The 3-Phase Motors can be used at 220V.

\*2. The values in ( ) are weight and dimensions for gearheads with reduction ratio 30 or higher.

### Induction Motor Specification (Single-phase) Continuous Rating, Number of Poles: 4P

Part Number	Output (W)	Voltage (V)	50Hz						60Hz						Capacitor μF
			Input (W)	Current (A)	Rotational Speed (r/min)	Torque (N·m)	Starting Current (A)	Starting Torque (N·m)	Input (W)	Current (A)	Rotational Speed (r/min)	Torque (N·m)	Starting Current (A)	Starting Torque (N·m)	
PACMS	60	6	100	0.21	1250	0.048	0.3	0.049	20	0.2	1575	0.038	0.3	0.049	2.5(200V)
			200	0.11	1250	0.048	0.15	0.049	20	0.1	1600	0.037	0.15	0.049	0.7(400V)
	70	15	100	0.37	1250	0.11	0.61	0.077	33	0.33	1575	0.088	0.57	0.077	4 (200V)
			200	0.18	1300	0.11	0.3	0.077	34	0.17	1600	0.088	0.29	0.077	1 (400V)
	80	25	100	0.55	1250	0.19	0.98	0.16	49	0.48	1550	0.15	0.94	0.16	6 (200V)
			200	0.27	1250	0.19	0.5	0.16	49	0.24	1575	0.15	0.47	0.16	1.5(400V)
90	40	100	0.86	1225	0.30	1.5	0.24	72	0.72	1550	0.25	1.5	0.25	10 (200V)	
		200	0.43	1250	0.30	0.83	0.25	72	0.36	1575	0.24	0.76	0.25	2.5(400V)	
60	60	100	1.18	1.3	1250	0.46	2.2	0.41	117	1.2	1550	0.36	2.2	0.42	15 (210V)
		200	0.65	1250	0.46	1.1	0.42	119	0.59	1550	0.36	1.1	0.44	3.8(400V)	
90	90	100	1.53	1.6	1325	0.65	3.3	0.47	160	1.6	1625	0.53	3.0	0.47	25 (200V)
		200	0.75	1325	0.62	1.7	0.47	160	0.8	1650	0.51	1.5	0.47	5.8(400V)	

⚡ Capacitor for Motor(Accessory)

PACMS, PACMT <For Induction Motors>

⚡ PACMR <For Reversible Motors>

Part Number	Output (W)	Voltage (V)	L	W	D	H	t
60	6	100	39.5	16	26.5	30.5	4
		200	39.5	16.2	27	27	4
70	15	100	39.5	16	26.5	30.5	4
		200	39.5	16.2	27	27	4
80	25	100	39.5	17.5	28	30.5	4
		200	39.5	22	32.5	32.5	4
40	40	100	39.5	26.7	37	32	4
		200	49.7	24	34.5	34.5	4
60	60	100	39.5	26.7	37	41	4
		200	50	26.7	37.5	38	4
90	90	100	50.2	31	41	42	5
		200	50	30.5	41	41.5	4

### Induction Motor Specification (3-Phase) Continuous Rating, Number of Poles: 4P

Part Number	Output (W)	Voltage (V)	50Hz						60Hz						
			Input (W)	Current (A)	Rotational Speed (r/min)	Torque (N·m)	Starting Current (A)	Starting Torque (N·m)	Input (W)	Current (A)	Rotational Speed (r/min)	Torque (N·m)	Starting Current (A)	Starting Torque (N·m)	
PACMT	80	25	200	0.50	0.25	1350	0.18	0.62	0.54	47	0.22	1625	0.15	0.58	0.40
			220	0.54	0.27	1375	0.18	0.67	0.66	49	0.23	1650	0.15	0.64	0.50
	40	200	200	0.69	0.31	1350	0.28	0.9	0.72	68	0.29	1625	0.24	0.82	0.51
			220	0.70	0.32	1375	0.27	1.0	0.88	66	0.28	1675	0.23	0.91	0.63
	90	60	200	1.01	0.45	1350	0.42	1.3	1.0	96	0.41	1625	0.35	1.2	0.69
			220	1.03	0.46	1375	0.41	1.5	1.2	98	0.4	1650	0.34	1.3	0.87
90	90	200	1.41	0.62	1350	0.63	2.0	1.6	137	0.56	1625	0.53	1.8	1.1	
		220	1.43	0.65	1400	0.62	2.2	2.0	137	0.56	1650	0.52	2.0	1.4	

⚡ The 3-Phase Motor can be used in 220V.

### Reversible Motor Specification (Single-phase) Rated for 30 minutes, Number of Poles: 4P

Part Number	Output (W)	Voltage (V)	50Hz						60Hz						Capacitor μF	Braking Torque *1x10 <sup>-3</sup> N·m	Override *2 rotation
			Input (W)	Current (A)	Rotational Speed (r/min)	Torque (N·m)	Starting Current (A)	Starting Torque (N·m)	Input (W)	Current (A)	Rotational Speed (r/min)	Torque (N·m)	Starting Current (A)	Starting Torque (N·m)			
PACMR	60	6	100	0.23	1250	0.047	0.3	0.050	22	0.22	1575	0.037	0.31	0.052	3.5(200V)	0.588	5.0
			200	0.11	1275	0.045	0.16	0.053	22	0.12	1600	0.036	0.16	0.053	0.9(400V)		
	70	15	100	0.36	1275	0.11	0.59	0.085	37	0.38	1575	0.088	0.57	0.085	6 (200V)		
			200	0.19	1275	0.11	0.3	0.078	37	0.19	1575	0.088	0.29	0.078	1.5(400V)		
	80	25	100	0.58	1275	0.19	1.0	0.17	57	0.59	1575	0.16	1.0	0.17	9.5(200V)		
			200	0.29	1275	0.19	0.52	0.19	57	0.29	1575	0.16	0.50	0.19	2.4(400V)		
90	40	100	0.94	1200	0.32	1.6	0.27	93	0.93	1525	0.25	1.5	0.26	15 (210V)			
		200	0.48	1200	0.32	0.81	0.28	93	0.46	1525	0.25	0.77	0.29	3.8(400V)			
60	60	100	1.44	1.5	1200	0.46	2.4	0.50	163	1.5	1500	0.39	2.3	0.53	25 (200V)		
		200	0.74	1225	0.46	1.2	0.53	153	0.77	1525	0.39	1.3	0.55	6.2(375V)			
90	90	100	1.71	1.7	1225	0.70	2.8	0.63	181	1.9	1525	0.56	2.7	0.64	30 (200V)		
		200	0.93	1150	0.72	1.4	0.64	170	0.96	1475	0.57	1.4	0.66	7.5(370V)			

\*1. Breaking torque values are for reference

\*2. "Override" means motor's fly wheeling rotation from power-OFF to a stop.

⚡ Capacitor for Motor(Accessory)

PACMR <For Reversible Motors>

Part Number	Output (W)	Voltage (V)	L	W	D	H	t
60	6	100	39.5	16	26.5	30.5	4
		200	39.5	16.2	27	27	4
70	15	100	39.5	17.5	28	30.5	4
		200	39.5	22	32.5	32.5	4
80	25	100	39.5	22	32.5	30.5	4
		200	49.7	24	34.5	34.5	4
40	40	100	39.5	26.7	37	41	4
		200	50	26.7	37.5	38	4
60	60	100	50.2	31	41	42	5
		200	50	30.5	41	41.5	4
90	90	100	50.2	31	41	42	5
		200	50	34	45	45	6

⚡ Allowable Torque when Gear Heads are Mounted \*The rotational speeds shown are based on synchronous operation speeds. Generally, the actual speeds may be 2 ~ 20% less than indicated value depending on load conditions.

⚡ Output shaft rotation direction is same as the motor for , others are reverse rotation.

Part Number	Output (W)	Reduction Ratio
-------------	------------	-----------------

# Small Geared Motors

## Variable Speed Motor Unit

■ **Features:** Motor combined with a speed controller, capable of infinitely variable speeds.



RoHS

Type	
Motor	Gear Heads
PACMV-U	(40W or lower) PACMGX
	(60W or higher) PACMGZ

▲ Accessory  
**Gear Heads** Key (Not available for A60)  
 Screws, Nuts, Washers (4 each)

### Unit Configuration

- Variable Speed Motors
  - Speed Controller
  - Capacitor
- Integrated in the speed controller for 40W or lower.  
 ④ Motor Extension Cable (1m)

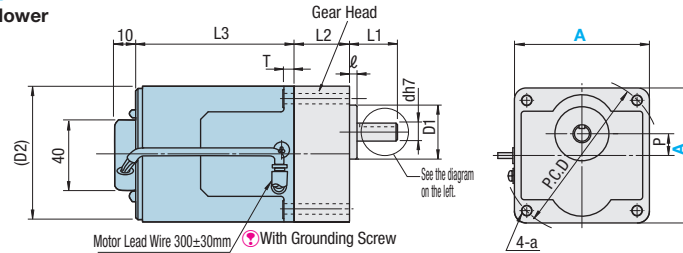
⚡ Rated Life: 10,000 hours  
 (When used for 8hrs./day at a constant load such as belt conveyors)  
 ⚡ For motor brackets, see **P.1115**

### Gear Heads

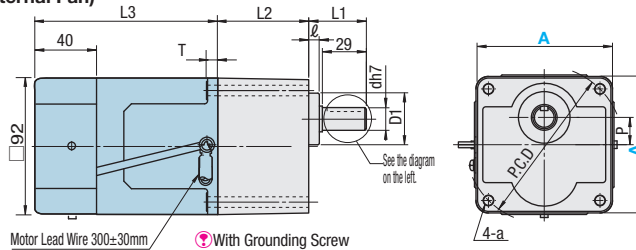
**PACMGX** (for Motor Output 40W or lower)  
**PACMGZ** (for Motor Output 60W or higher)

### Variable Speed Motors

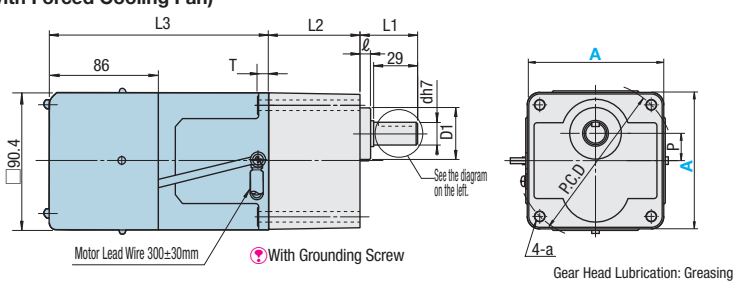
**PACMV-U**  
 • 40W or lower



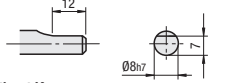
### • 60W (with External Fan)



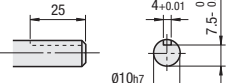
### • 90W (with Forced Cooling Fan)



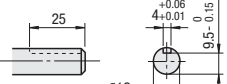
### A60 Shaft Details



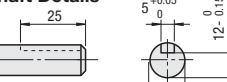
### A70, 80 Shaft Details



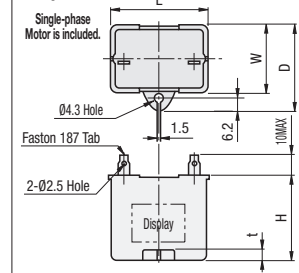
### A90 (40W) Shaft Details



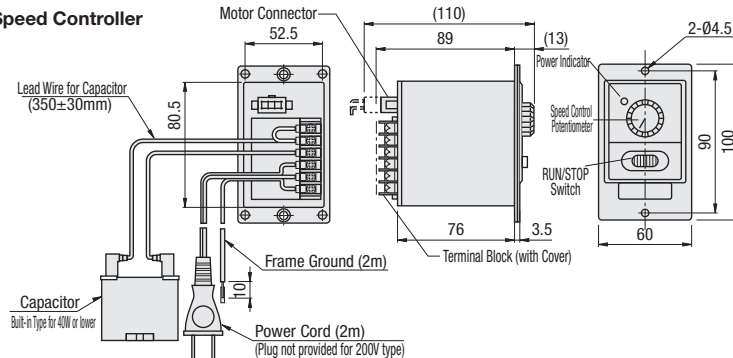
### A90 (60W, 90W) Shaft Details



### Capacitor



### Speed Controller



⚡ How to Mount **P.1110**

### Variable Speed Motor Unit

Part Number	Output (W)	Voltage (V)	d	D1	L1	L2*	L3	ℓ	T	(D2)	P	a	P.C.D	Mass (kg)*		Unit Price	
														Motor	Gear Heads		
PACMV-U	60	6	100	8	25	32	75	6	7	65	10	4.5	70	0.71	0.24 (0.3)		
														1.1	0.38 (0.45)		
														1.5	0.6		
	70	15	200	10	30	30(36)	80	5	7	74	15	5.5	94	2.4	0.8		
														2.7	1.4		
														3.5	1.4		
	80	25	200	12	36	37	105	5	7.5	95	18	6.5	104	2.4	0.8		
														2.7	1.4		
														3.5	1.4		
	90	40	100	15	34	60	150	7	7.5	-	-	-	-	-	2.4	0.8	
															2.7	1.4	
															3.5	1.4	

\* The values in ( ) are weight and dimensions for gear heads with reduction ratio 30 or higher.

### Variable Speed Motor Unit Specifications Continuous Rating, Number of Poles: 4P

Part Number	Output (W)	Voltage (V)	50Hz			60Hz			Capacitor μF	
			Allowable Torque N·m (kgf·cm) When 1200r/min	Starting Current (A)	Starting Torque N·m (kgf·cm)	Allowable Torque N·m (kgf·cm) When 90r/min	Starting Current (A)	Starting Torque N·m (kgf·cm)		
PACMV-U	60	6	0.032(0.32)	0.03	0.037(0.37)	0.032(0.32)	0.025(0.25)	0.15	2.5(200V)	
			0.089(0.90)	0.6	0.068(0.69)	0.089(0.90)	0.029(0.29)	0.28	0.6(400V)	
			0.14 (1.4)	1.0	0.16 (1.6)	0.14 (1.4)	0.039(0.39)	1.0	5 (200V)	
	70	15	200	0.029(0.29)	0.3	0.068(0.69)	0.029(0.29)	0.029(0.29)	0.5	1.3(400V)
				0.049(0.5)	0.5	0.25 (2.5)	0.049(0.5)	0.049(0.5)	0.5	8 (200V)
				0.43 (4.3)	1.6	0.46 (4.6)	0.43 (4.3)	0.078(0.79)	1.6	2 (400V)
	80	25	200	0.025(0.25)	0.3	0.068(0.69)	0.025(0.25)	0.025(0.25)	0.5	3 (400V)
				0.049(0.5)	0.8	0.25 (2.5)	0.049(0.5)	0.049(0.5)	0.8	12 (200V)
				0.59 (6.0)	2.3	0.53 (5.4)	0.59 (6.0)	0.078(0.79)	2.3	20 (200V)
	90	40	100	0.025(0.25)	1.2	0.46 (4.6)	0.025(0.25)	0.025(0.25)	1.1	5 (400V)
				0.25 (2.5)	2.3	0.53 (5.4)	0.25 (2.5)	0.078(0.79)	2.2	25 (200V)
				0.25 (2.5)	2.3	0.53 (5.4)	0.25 (2.5)	0.078(0.79)	2.2	25 (200V)

### Capacitor (Accessory)

A	Output (W)	Voltage (V)	L	W	D	H	t
90	60	100	50.2	26.7	37	36	5
		200	50	30.5	41	41.5	4
		100	50.2	31	41	42	5
	90	200	50	30.5	41	41.5	4

⚡ Included with 60 / 90W motors only (Integrated with the speed controllers for 40W or lower).

⚡ **Allowable Torque when Gear Heads are Mounted** (For Variable Speed Motor Unit, available torque is restricted depending on the rotational speed of the motor. For details, see **P.1109**.)  
 ⚡ Output shaft rotation direction is same as the motor for **3-18**, others are reverse rotation.

Part Number	Output (W)	Rotational Speed (r/min)	Reduction Ratio	Allowable Torque N·m																						
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
PACMV-U	60	6	1200	0.077	0.093	0.13	0.15	0.19	0.23	0.25	0.32	0.38	0.46	0.51	0.64	0.69	0.83	1.16	1.39	1.74	2.09	2.33	2.45	2.45		
			90	0.06	0.07	0.10	0.12	0.15	0.18	0.20	0.25	0.30	0.36	0.40	0.50	0.54	0.65	0.90	1.08	1.35	1.62	1.81	2.17	2.45	2.45	
			1200	0.21	0.25	0.36	0.43	0.54	0.64	0.72	0.86	1.08	1.29	1.44	1.88	1.92	2.3	3.20	3.84	4.80	4.90	4.90	4.90	4.90	4.90	4.90
	70	15	200	1200	0.070	0.084	0.11	0.14	0.17	0.21	0.23	0.28	0.35	0.42	0.47	0.58	0.63	0.75	1.05	1.26	1.58	1.89	2.11	2.53	3.16	3.79
				90	0.070	0.084	0.11	0.14	0.17	0.21	0.23	0.28	0.35	0.42	0.47	0.58	0.63	0.75	1.05	1.26	1.58	1.89	2.11	2.53	3.16	3.79
				1200	0.34	0.4	0.56	0.68	0.85	1.02	1.13	1.41	1.7	2.04	2.26	2.83	3.06	3.67	5.1	6.12	7.65	7.84	7.84	7.84	7.84	7.84
	80	25	200	1200	0.094	0.11	0.15	0.18	0.23	0.28	0.31	0.39	0.47	0.56	0.63	0.78	0.84	1.01	1.41	1.69	2.12	2.54	2.83	3.39	4.24	5.09
				90	0.094	0.11	0.15	0.18	0.23	0.28	0.31	0.39	0.47	0.56	0.63	0.78	0.84	1.01	1.41	1.69	2.12	2.54	2.83	3.39	4.24	5.09
				1200	0.72	0.87	1.21	1.45	1.82	2.18	2.43	3.03	3.64	4.37	4.86	6.07	6.54	7.84	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80
	90	40	200	1200	0.11	0.14	0.19	0.23	0.29	0.35	0.39	0.49	0.59	0.71	0.79	0.99	1.06	1.28	1.78	2.13	2.67	3.20	3.56	4.27	5.34	6.40
				90	0.11	0.14	0.19	0.23	0.29	0.35	0.39	0.49	0.59	0.71	0.79	0.99	1.06	1.28	1.78	2.13	2.67	3.20	3.56	4.27	5.34	6.40
				1200	0.98	1.17	1.57	1.87	2.35	2.80	3.14	3.92	4.70	5.60	6.27	7.55	9.01	10.80	15.20	18.10	19.60	19.60	19.60	19.60	19.60	19.60
90	60	100	1200	0.18	0.22	0.31	0.37	0.47	0.56	0.63	0.70	0.84	1.00	1.12	1.40	1.68	1.81	2.50	3.00	3.75	4.50	5.00	6.00	7.50	9.00	
			90	0.18	0.22	0.31	0.37	0.47	0.56	0.63	0.70	0.84	1.00	1.12	1.40	1.68	1.81	2.50	3.00	3.75	4.50	5.00	6.00	7.50	9.00	
			1200	1.43	1.71	2.38	2.86	3.57	4.29	4.77	5.36	6.43	7.72	8.58	10.97	12.80	13.70	19.20	19.60	19.60	19.60	19.60	19.60	19.60	19.60	
90	90	200	1200	0.60	0.72	1.01	1.21	1.51	1.81	2.02	2.26	2.71	3.25	3.62	4.52	5.43	5.83	8.10	9.72	12.10	14.50	16.20	19.40	19.60	19.60	
			90	0.60	0.72	1.01	1.21	1.51	1.81	2.02	2.26	2.71	3.25	3.62	4.52	5.43	5.83	8.10	9.72	12.10	14.50	16.20	19.40	19.60	19.60	
			1200	0.60	0.72	1.01	1.21	1.51	1.81	2.02	2.26	2.71	3.25	3.62	4.52	5.43	5.83	8.10	9.72	12.10	14.50	16.20	19.40	19.60	19.60	

### Gear Heads (for Motor Output of 40W or lower)

Part Number	Type	A	Reduction Ratio Selection							Unit Price		
			3-18	20-36	50-180	Reduction Ratio	Reduction Ratio	Reduction Ratio				
PACMGX	60	A	3	3.6	5	6	7.5	9	10			
			12.5	15	18	20	25					
			30	36	50	60	75	90				
			100	120	150	180						

### Gear Heads (for Motor Output of 60W or higher)

Part Number	Type	A	Reduction Ratio Selection									Unit Price			
			3-9	10-18	20-60	75-180	Reduction Ratio	Reduction Ratio	Reduction Ratio	Reduction Ratio					
PACMGZ	90	A	3	3.6	5	6	7.5	9	10						
			12.5	15	18	20	25								
			30	36	50	60	75	90							
			100	120	150	180									



Ordering Example  
 Variable Speed Motor Unit: Part Number - Output (W) - Voltage (V)  
 Gearheads: Part Number - Reduction Ratio  
**PACMV-U80 - W25 - V100 PACMGX80 - 50**



Alterations  
 Part Number - Output (W) - Output (W) - (MTC)  
**PACMV-U80 - W25 - V100 - MTC3**

⚡ For transportation, installation, assembly, wiring, operating, and maintenances of motors, see the included manual.

### Motor Extension Cable



Alteration Code	Length (m)
MTC	2
	3
	5

RoHS

