



SPEED CONTROL INDUCTION MOTORS

Frame size 90mm sq. (3.54 in. sq.)

90W (1/8 HP)

Single-Phase

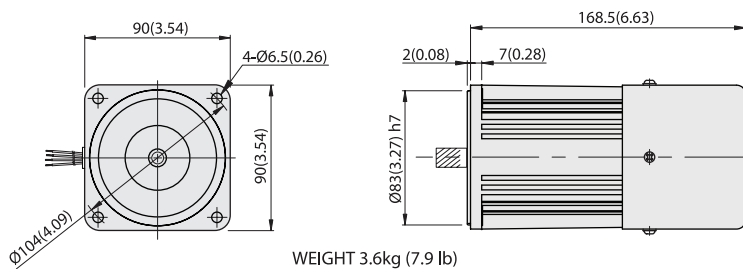
LEAD WIRE TYPE

DIMENSIONS

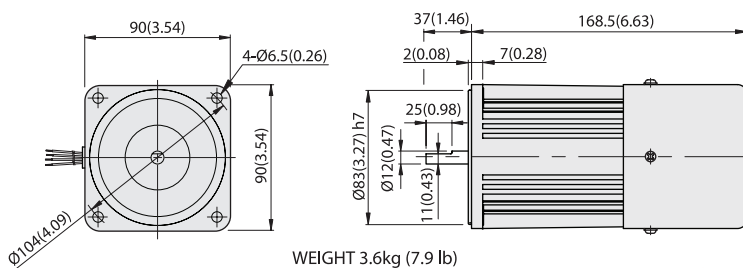
SPEED-TORQUE CURVE

Unit : mm(inch)

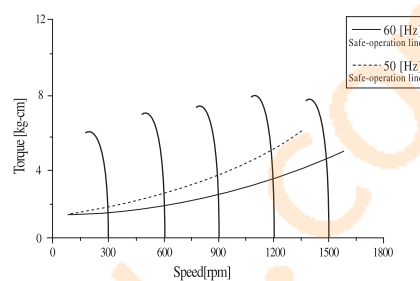
E9I90P□HT



E9I90D□HT

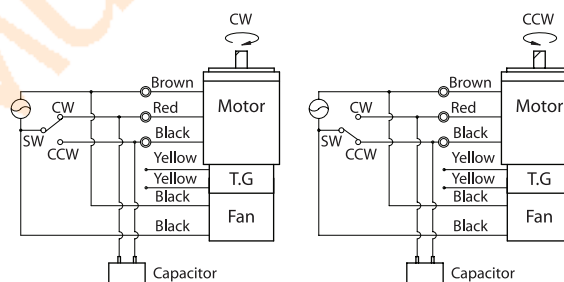


Single phase E9I90□□HT



CONNECTION DIAGRAMS

Standard or with T.P



The direction of rotation is seen from the end of motor shaft.



SPECIFICATIONS

CONTINUOUS DUTY, INSULATION CLASS A or E, 4POLES

Model	Maximum Output		Voltage	Frequency	Input	Max. Current	Permissible Torque						Speed Range	Starting Torque			Capacitor
	(HP)	(W)					1200(rpm)			90(rpm)							
			(kg-cm)	(N-m)	(oz-in)	(kg-cm)	(N-m)	(oz-in)									
E9I90□CHT	1/8	90	1 Ø 100	50	200	2.5	6	0.588	83.32	2.3	0.225	31.94	90~1400	4.5	0.441	62.49	25
				60	200	2.4	5.5	0.539	76.38	2.3	0.225	31.94	90~1700	4.5	0.441	62.49	
E9I90□DHT	1/8	90	1 Ø 200	50	200	1.1	6	0.588	83.32	2.3	0.225	31.94	90~1400	5.4	0.529	74.99	7
				60	200	1.2	5.5	0.539	76.38	2.3	0.225	31.94	90~1700	5.4	0.529	74.99	
E9I90□BHT	1/8	90	1 Ø 220	60	210	1.3	6	0.588	83.32	2.5	0.245	34.72	90~1700	5.1	0.500	70.82	6
E9I90□EHT	1/8	90	1 Ø 115	60	210	2.4	6	0.588	83.32	2.2	0.216	30.55	90~1700	4.5	0.441	62.49	20
E9I90□XHT	1/8	90	1 Ø 220~240	50	210	1.2	7.1	0.696	98.60	2.3	0.225	31.94	90~1400	5.1	0.500	70.82	6

* Model in grey screen represents the motors with THERMALLY PROTECTED according to UL regulation.

* Model in dark grey screen represents the motors with THERMALLY PROTECTED according to CE regulation.



GEARHEADS(POWERFUL TYPE)

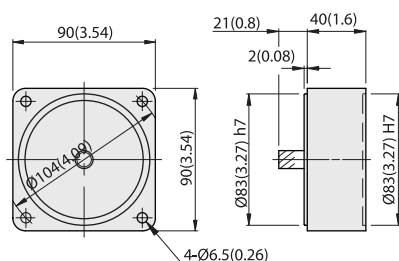
Frame size 90mm sq. (3.54 in. sq.)

BALL BEARING TYPE

DIMENSIONS

DECIMAL GEARHEAD

E9V10D

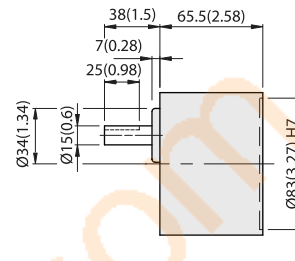


WEIGHT 0.6kg (1.3 lb)

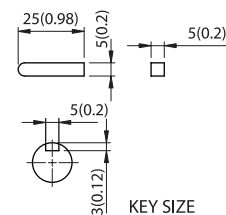
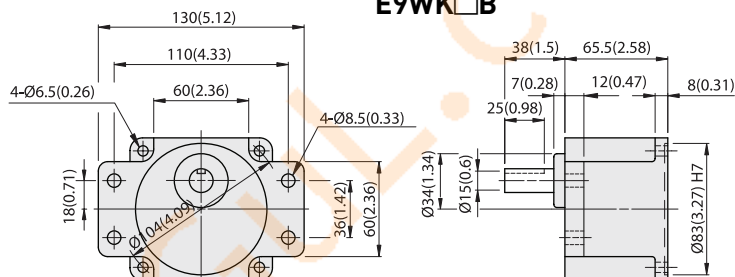
GEARHEAD

Unit : mm(inch)

E9VK□B



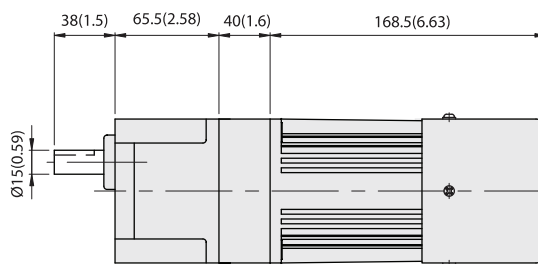
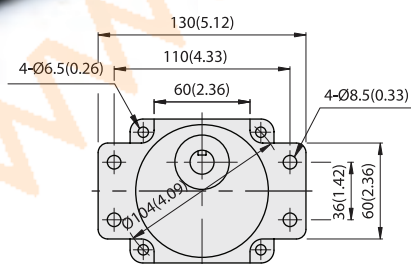
E9WK□B



KEY SIZE

MODEL	GEAR RATIO	WEIGHT		BOLT
		kg	lb	
E9VK□B	1/3~1/200	1.5	3.3	M6x95
E9WK□B	1/3~1/200	1.6	3.5	M8xL30

E9WK□B + E9V10D + E9I90P□HT



RATED TORQUE OF GEARHEAD

MODEL	Speed(rpm)		500	300	200	120	100	60	50	30	20	15	10	6	5	3	2	1	
	Ratio	Speed	50Hz	3	5	7.5	12.5	15	25	30	50	75	100	150	250	300	500	750	1500
		60Hz	3.6	6	9	15	18	30	36	60	90	120	180	300	360	600	900	1800	
E9VK□B E9WK□B E9V10D(DECIMAL)	High	kg-cm	14.6	24.3	36.5	54.8	65.7	99.0	118.8	198.0	200	200	200	200	200	200	200	200	200
	Low		5.6	9.3	14.0	21.0	25.2	38.0	45.5	75.9	101.8	135.7	200	200	200	200	200	200	200
	High	N-m	1.43	2.38	3.57	5.37	6.44	9.70	11.64	19.40	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
	Low		0.55	0.91	1.37	2.06	2.47	3.72	4.46	7.44	9.97	13.30	19.60	19.60	19.60	19.60	19.60	19.60	
	High	oz-in	202	337	506	760	912	1375	1650	2750	2777	2777	2777	2777	2777	2777	2777	2777	2777
	Low		78	129	194	291	350	527	632	1054	1413	1884	2777	2777	2777	2777	2777	2777	2777

*The normal torque is that the motor and gearhead are directly coupled.

*Insert the denominator of reduction ratio in □ of gearhead model name.

*Actual rotation speed is 2~15% less than synchronous speed.

*Color indicates that the rotation of gearhead shaft is in opposite direction as output shaft of motor.

With Decimal Gearhead



CONTROLLER

ESA-U SERIES

UNIT TYPE



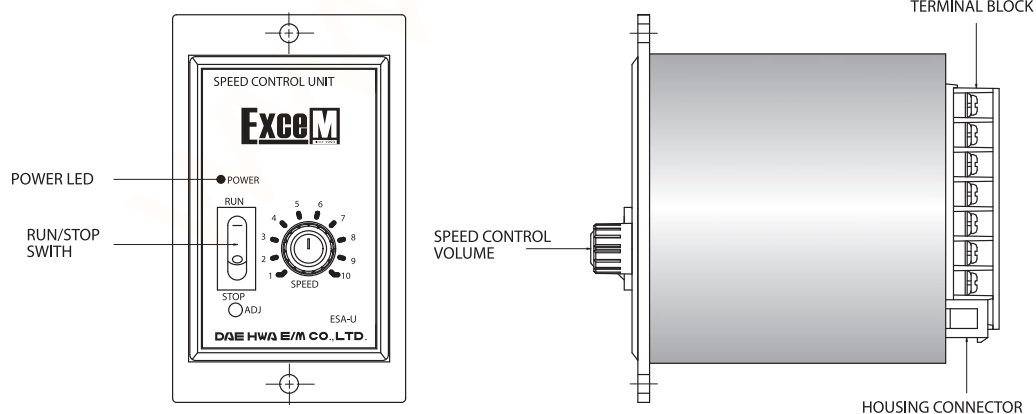
Features

- Speed Controller with Tacho generator
- Digital Type : PI Automatic Control by MICOM
- One-touch connection by 8 pin housing connector (extension cord 3[m] long max, optional)
- Built-in speed setting

Operation

1. Turn on the main circuit breaker.
2. Turn on the RUN/STOP switch.
3. Turn "Speed Control Knob" slowly, clockwise, to increase speed.
4. Turn "Speed Control Knob" slowly, counter clockwise, to decrease speed.
5. Turn off the RUN/STOP switch to stop the motor

* No.1 and No.2 of TERMINAL BLOCK can use as remote s/w





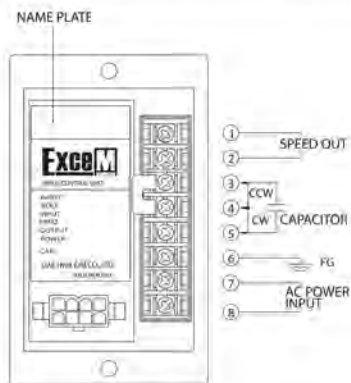
CONTROLLERS

ESA-U SERIES

UNIT TYPE

CONTROLLER

Changing the motor's rotation "CW" (set at the factory) to "CCW"



* CW

④ and ⑤ connection (short)

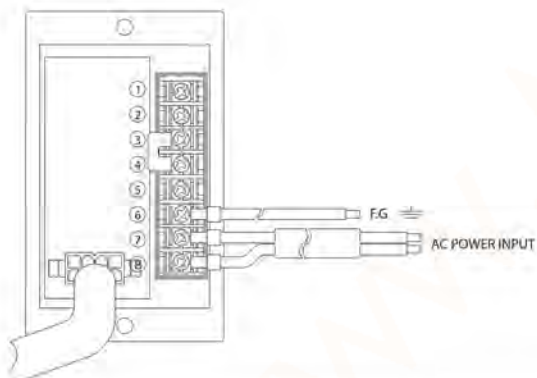
* CCW

③ and ④ connection (short)

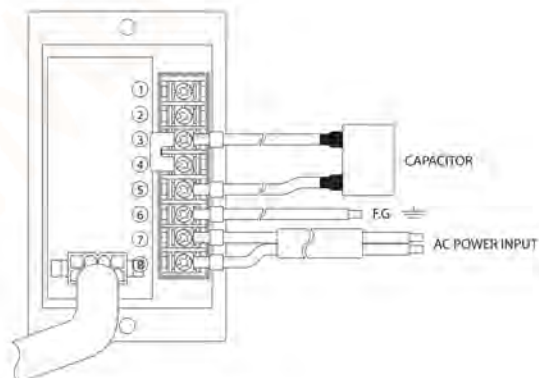
Connection

Motor & Controller Connection

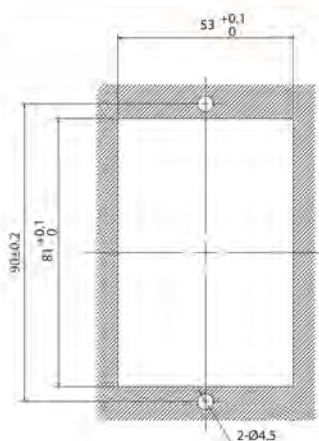
Internal Capacitor type



External Capacitor type



Installation



▶ Cut a hole in the mounting plate as indicated in the diagram to the left.

▶ Insert the control unit from the front of the mounting plate and fasten with screws and nuts.

Mounting screw (M4 × 10) 2
Nuts 2
Washers 2



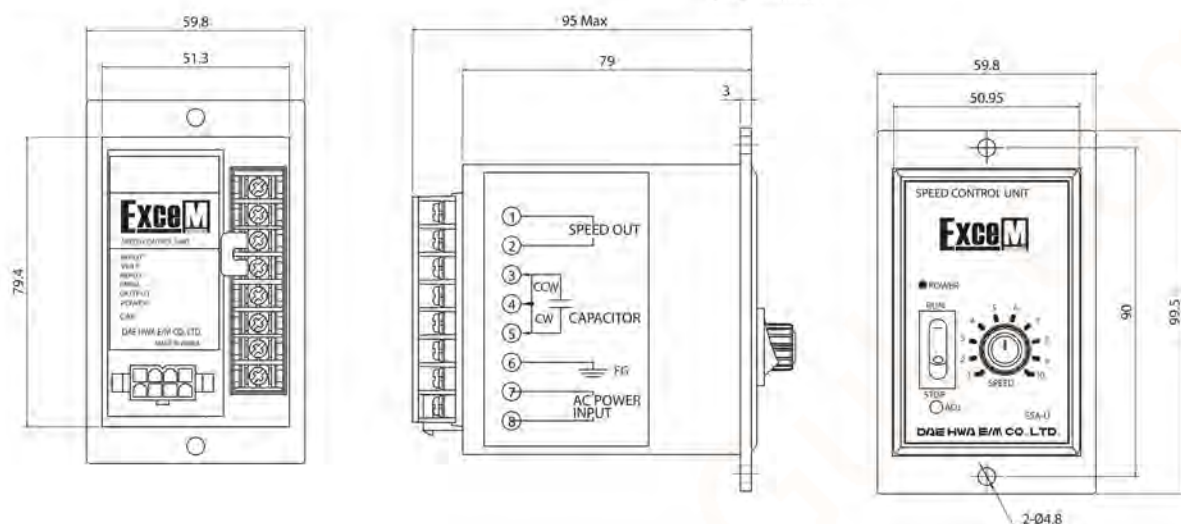
CONTROLLERS

ESA-U SERIES

UNIT TYPE

Dimensions

Unit : mm(inch)



Performance Data

Item	Model	ESA-U □□				
		1 Ph. 100V	1 Ph. 200V	1 Ph. 115V	1 Ph. 220V	1 Ph. 220V~240V
1	Input voltage	1 Ph. 100V	1 Ph. 200V	1 Ph. 115V	1 Ph. 220V	1 Ph. 220V~240V
2	Input voltage Threshold	Rated voltage $\pm 10\%$				
3	Input Frequency	50/60 Hz				
4	Speed Range	50Hz : 90~1400 rpm, 60Hz : 90~1700rpm				
5	Permissible Current	MAX. 5A				
6	Motor output	6W ~ 180 W				
7	Control method	TRIAC AC PHASE CONTROL				
8	Speed Control method	PI Automatic Control by MICOM				
9	Sensor Type	AC Tacho Generator(T,G)				
10	Speed set method	Volume type				
11	Power switch	Tumbler switch				
12	Display Red LED	Input Power ON : light, Input Power OFF : off				
13	Weight	About 170g(Except for Internal Capacitor)				
14	Operating Temp.	-5° ~ +40°				
15	Operating Humidity	Max 85% (No condensation)				
16	FUSE	Inside control unit				
17	Insulation Resistance	100M Ω or more when 500VDC is applied between the windings and the frame				
18	Dielectric Strength	Sufficient to withstand 1.5kV at 50/60Hz applied between the windings and the frame for 1 minute				
19	EMC	Please contact us				



CONTROLLERS

ESA-U SERIES

UNIT TYPE

Extension Cord



- ※ Extension cord(optional) is conveniently used when motor is located more than 300[mm] apart from control unit
- ※ Standard length is 0.5[m]
(option : max 3[m])