

# STEPPING MOTORS

# SP60-2000

## FEATURES

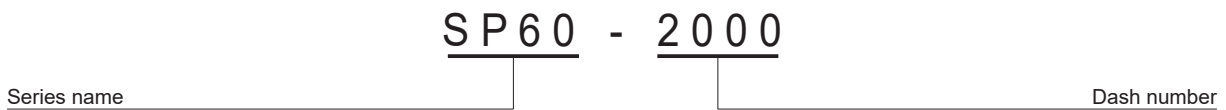
- Stepping actuators with built-in sensor
- Provided with connector terminals for easy connection
- 2.25° micro step at 2 phase exciting
- Axis constructure for easy installation of display

## APPLICATIONS

- Game machines
- Indicators

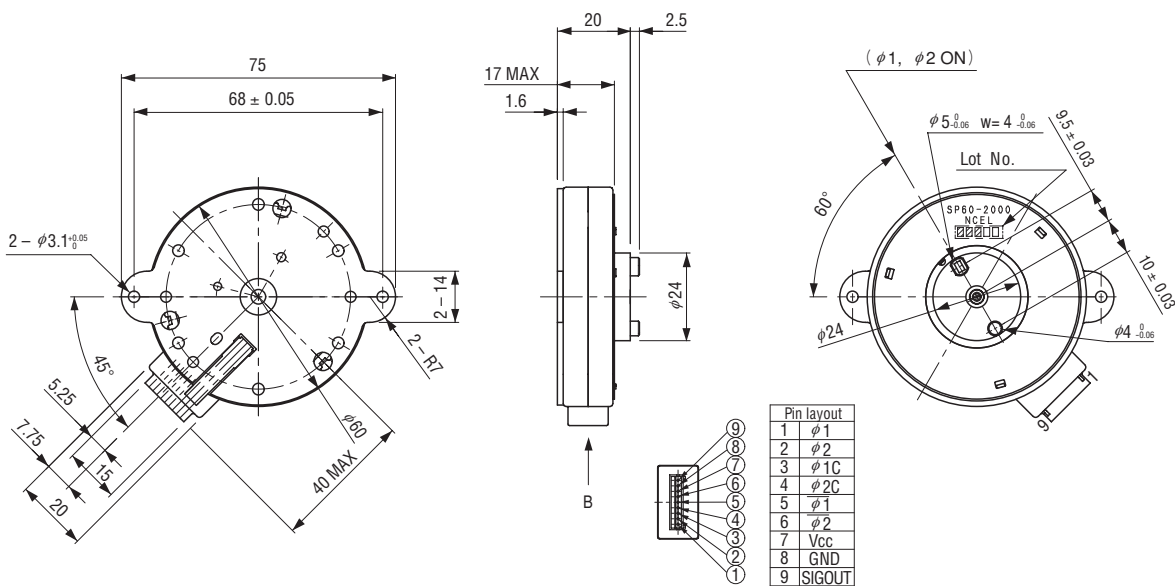


## PART NUMBER DESIGNATION



## OUTLINE DIMENSIONS (Reference)

Unless otherwise specified tolerance: ± 0.5 (Unit: mm)

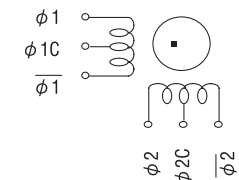


**Lot production is required. Please consult us for ordering.**

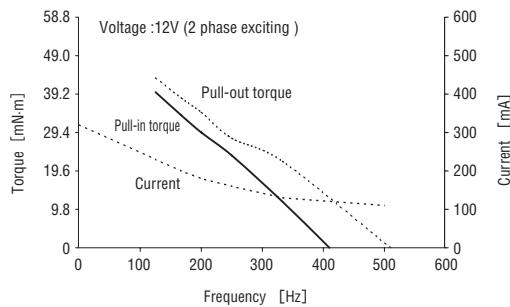
# SP60-2000

## STEPPING MOTORS

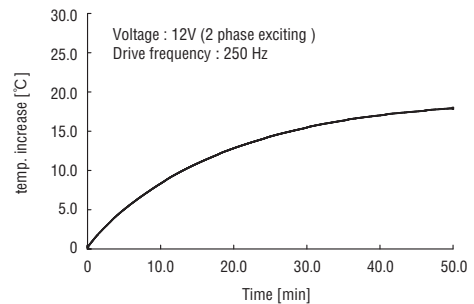
### REFERENCE SPECIFICATIONS

Item	SP60-2000																									
Number of phases/Excitation	4 / 2 phases unipolar																									
Basic step angle	2.25° (2 phases exciting) 1.125° (1-2 phases exciting)																									
Number of phases	160 (2 phases exciting) 320 (1-2 phases exciting)																									
Winding resistance	73Ω (±10%)																									
Inductance	46mH(Reference value)																									
Input rating	Average power consumption 3W maximum																									
Current, Pull-in torque, Pull-out torque	Refer to PERFORMANCE CURVES																									
Pull-in pulse rate, Maximum continuous response frequency, Temperature																										
Insulation class	Type E																									
Insulation resistance	30MΩ minimum (DC 500V)																									
Dielectric strength	AC 600V 1 second Leakage current 1mA maximum																									
Net weight	160g																									
Connector terminal	<p>Male connector <u>09ZR-8M-P</u> or <u>ZHR-9(white)</u> Made by J.S.T.Mfg.Co.,Ltd</p> <table> <tr> <td>Pin No.</td> <td>1</td> <td><math>\phi 1</math></td> <td>6</td> <td><math>\overline{\phi 2}</math></td> </tr> <tr> <td></td> <td>2</td> <td><math>\phi 2</math></td> <td>7</td> <td>Vcc</td> </tr> <tr> <td></td> <td>3</td> <td><math>\phi 1C</math></td> <td>8</td> <td>GND</td> </tr> <tr> <td></td> <td>4</td> <td><math>\phi 2C</math></td> <td>9</td> <td>SIGOUT</td> </tr> <tr> <td></td> <td>5</td> <td><math>\overline{\phi 1}</math></td> <td></td> <td></td> </tr> </table> 	Pin No.	1	$\phi 1$	6	$\overline{\phi 2}$		2	$\phi 2$	7	Vcc		3	$\phi 1C$	8	GND		4	$\phi 2C$	9	SIGOUT		5	$\overline{\phi 1}$		
Pin No.	1	$\phi 1$	6	$\overline{\phi 2}$																						
	2	$\phi 2$	7	Vcc																						
	3	$\phi 1C$	8	GND																						
	4	$\phi 2C$	9	SIGOUT																						
	5	$\overline{\phi 1}$																								

### PERFORMANCE CURVES



### TEMPERATURE CHARACTERISTICS



※ These performance curves show actual value, not guaranteed value.

**Lot production is required. Please consult us for ordering.**