



**KOCO**  
MOTION

## A VARIETY OF APPLICATIONS



PRECISION DC CORELESS MOTOR

1



BRUSHLESS DC MOTOR

2



ELECTRONIC SPEED CONTROLLER

3



PRECISION GEARMOTOR

4



PRECISION SERVO MOTOR

5



DC CORELESS MOTOR

6



FLAT DC MOTOR

7



DC CORE MOTOR

8



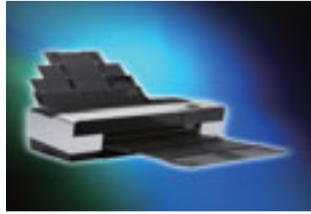
**MINI STEP MOTOR**

9



SONIC MOTOR

10



## Overview of the MINI STEP MOTORS

	<b>Motor No.</b>	<b>Dia x Length (max)</b>	<b>Max. Torque</b>	<b>Page</b>
1	<b>1011P0209</b>	10.00 x 10.20 mm	0.40 mNm	4
2	<b>1511P0209</b>	15.00 x 11.60 mm	1.00 mNm	5
3	<b>3515P0489</b>	35.00 x 15.00 mm	10.00 mNm	6

# 9

## Product Introduction



### MINI STEP MOTOR

The mini step motor features rational design, reliable performance, good positioning precision in an open-circuit system and repeatability of movement. Matching with different driving way, corresponding stepover requirements can be achieved. It is applied in the fields of security system, office automation system, medical equipment, mini household appliance and toys and so on.



# Permanent Magnet · 1011P0209

Motor Characteristics			-015-5.0
1	No. of phase		2
2	Excitation mode		2-2
3	Voltage	V	5
4	Resistance	Ω	15
5	Step angle	Deg	18°
6	Current	A	0.3
7	No-load pull-in frequency	pps	1200
8	No-load pull-out frequency	pps	1300
9	Detent torque	mNm	0.1
10	Pull-in torque	mNm	0.4
11	Load pull-in frequency	pps	500
12	Weight	g	5.5
13	Operating temperature range	°C	-20 ~ +100

## Applications

Security systems,  
office automation systems,  
medical equipment,  
mini household appliances,  
toys, etc.

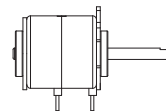
## Options

Lead wire

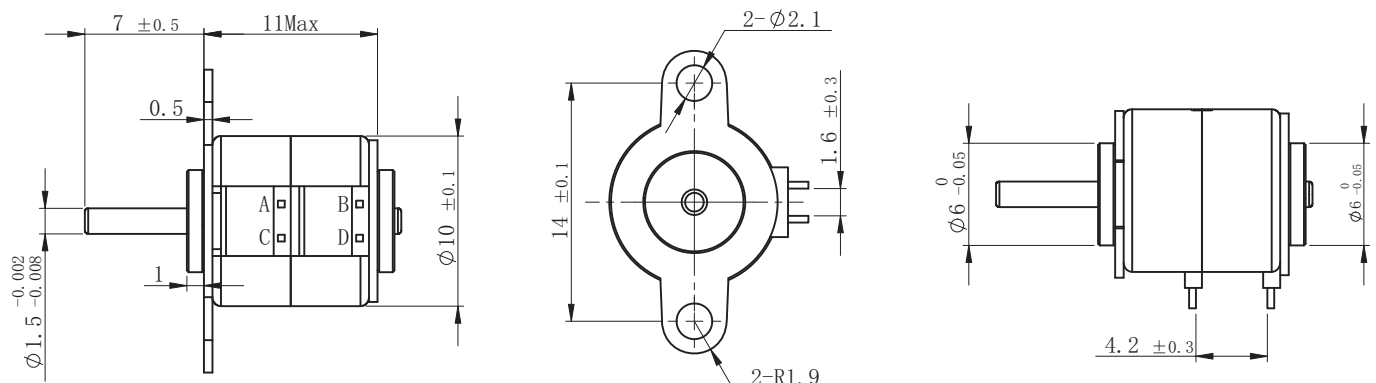
Special shaft

Flange

## Approx. actual size



## Dimension (mm) · 1011P0209



## Sequence Diagram

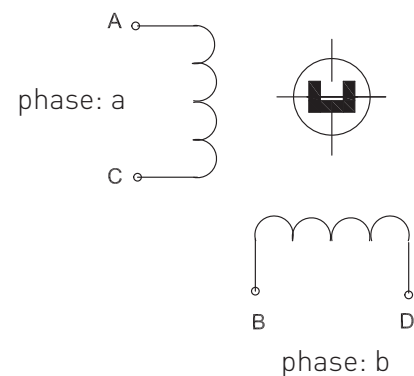
Excitation Mode  
2-2

CCW →

PIN	Step 1	Step 2	Step 3	Step 4
A	+	-	-	+
C	-	+	+	-
B	+	+	-	-
D	-	-	+	+
Phase	a,b	-a,b	-a,-b	a,-b

← CW

## Wiring Diagram



# Permanent Magnet · 1511P0209

Motor Characteristics			-013-5.0
1	No. of phase		2
2	Excitation mode		2-2
3	Voltage	V	5
4	Resistance	Ω	12.6
5	Step angle	Deg	9°
6	Current	A	0.25
7	No-load pull-in frequency	pps	1200
8	No-load pull-out frequency	pps	1500
9	Detent torque	mNm	0.80
10	Pull-in torque	mNm	1
11	Load pull-in frequency	pps	1000
12	Weight	g	9.5
13	Operating temperature range	°C	-20 ~ +100

## Applications

Security systems,  
office automation systems,  
medical equipment,  
mini household appliances,  
toys, etc.

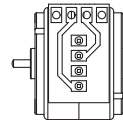
## Options

Lead wire

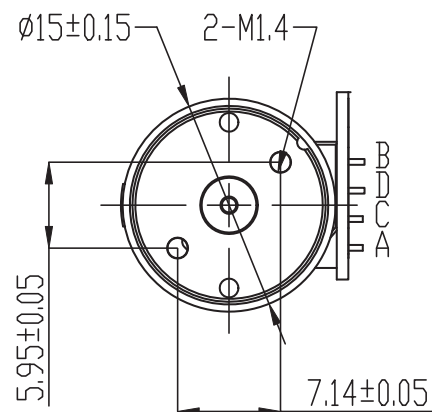
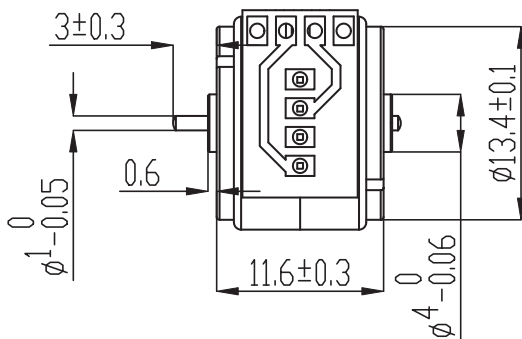
Special shaft

Flange

## Approx. actual size



## Dimension (mm) · 1511P0209



## Sequence Diagram

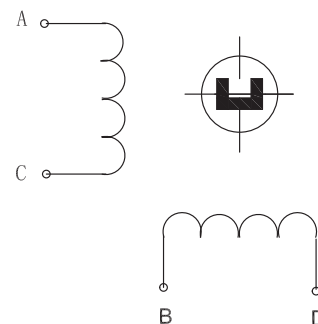
Excitation Mode  
2-2

CCW →

PIN	Step 1	Step 2	Step 3	Step 4
A	+	-	-	+
C	-	+	+	-
B	+	+	-	-
D	-	-	+	+
Phase	a,b	-a,b	-a,-b	a,-b

← CW

## Wiring Diagram



# Permanent Magnet · 3515P0489

Motor Characteristics			-142-24.0
1	No. of phase		4
2	Excitation mode		1-2
3	Voltage	V	24
4	Resistance	Ω	142
5	Step angle	Deg	3.75°
6	Current	A	0.16
7	No-load pull-in frequency	pps	1200
8	No-load pull-out frequency	pps	1500
9	Detent torque	mNm	5
10	Pull-in torque	mNm	10
11	Load pull-in frequency	pps	200
12	Weight	g	32
13	Operating temperature range	°C	-20 ~ +80

## Applications

Security systems,  
office automation systems,  
medical equipment,  
mini household appliances,  
toys, etc.

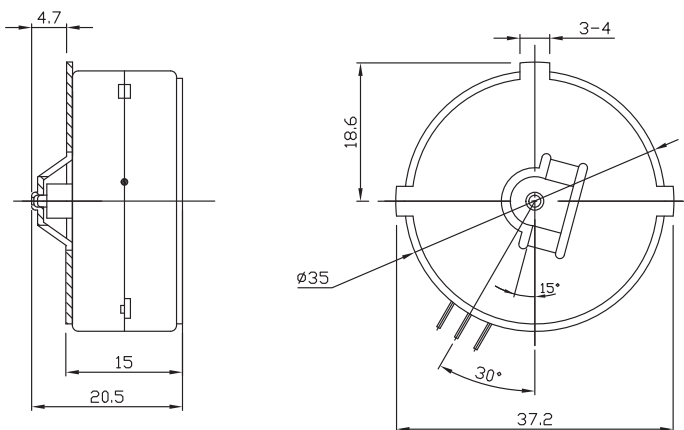
## Options

Lead wire

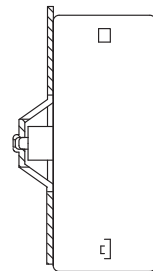
Special shaft

Flange

## Dimension (mm) · 3515P0489



## Approx. actual size



## Sequence Diagram

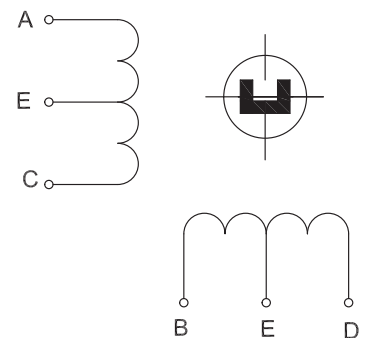
Excitation Mode  
2-2

CCW →

PIN	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8
E	+	+	+	+	+	+	+	+
A	-	-	-	-	-	-	-	-
B		-	-	-	-	-	-	-
C				-	-	-	-	-
D						-	-	-

← CW

## Wiring Diagram





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