


**STEPPING MOTOR
SPECIFICATION**

MOONS' MODEL
20PM020L6-00702 
4611120001907




1. RATED CHARACTERISTICS AND CONDITIONS

NO.	ITEM	SPECIFICATION	REMARK
1.1	Rated Voltage	12V DC	
1.2	Constant Current	0.43A/Phase	Chopper Driver IC
1.3	Phase Number	Two (2)	Phases A&B
1.4	Step Angle	18°	Full-Step
1.5	Excitation Method	Bipolar Full-Step	
1.6	Insulation Class	Class B	

2. ELECTRICAL CHARACTERISTICS 

NO.	ITEM	SPECIFICATION	REMARK
2.1	Resistance per Phase	7Ω ± 10%	@ 25°C
2.2	Inductance per Phase A/B	5.6mH ±20%	1 kHz 1V rms
2.3	Holding Torque	120gcm min.	Two-Phase On
2.4	Detent Torque	25gcm max.	
2.5	Dynamic Pull-in Torque	70gcm min.	300 pps Full-Step
2.6	Dynamic Pull-in Torque	40gcm min.	600 pps Full-Step
2.7	Dynamic Pull-out Torque	75gcm min.	500 pps Full-Step
2.8	Dynamic Pull-out Torque	65gcm min.	1000 pps Full-Step
2.9	Pull-in Pulse Rate	1000pps min.	No Load Full-Step
2.10	Step Angle Accuracy	18° ± 7%	@1 pps Full-Step
2.11	Insulation Resistance	100 MΩ min.	Case-lead DC500V
2.12	Dielectric Strength	Leak Current 3mA max.	Case-lead AC600V 1 sec.
2.13	Temperature Rise	80K max. Two phase on	On 60x60x2t Al Plate
2.14	Direction of Rotation	CW & CCW	Seen from Flange Side

REV	DESCRIPTION	DATE
A	FIRST ISSUED	2016.12.28
B	Rear panel changed	2017.11.29
C	Cover changed	2019.02.26
D	Electrical characteristics and P/N changed 	2019.04.29

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3. MECHANICAL CHARACTERISTICS

NO.	ITEM	SPECIFICATION	REMARK
3.1	Radial Shaft Loading	5N Max.	
3.2	Axial Shaft Loading	1N Max.	
3.3	Radial Shaft Play	0.05 mm Max.	@500g
3.4	Axial Shaft Play	0.6 mm Max.	@500g
3.5	Mass	Approximate 27g	
3.6	Rotor Inertia	Approximate 0.41gcm ²	

4. OPERATING CONDITIONS

NO.	ITEM	SPECIFICATION	REMARK
4.1	Operating Temperature	-20°C ~ +50°C	
4.2	Operating Humidity	15 ~ 85% RH	No Condensation
4.3	Storage Temperature	-30°C ~ +70°C	
4.4	Storage Humidity	15~ 85% RH	No Condensation

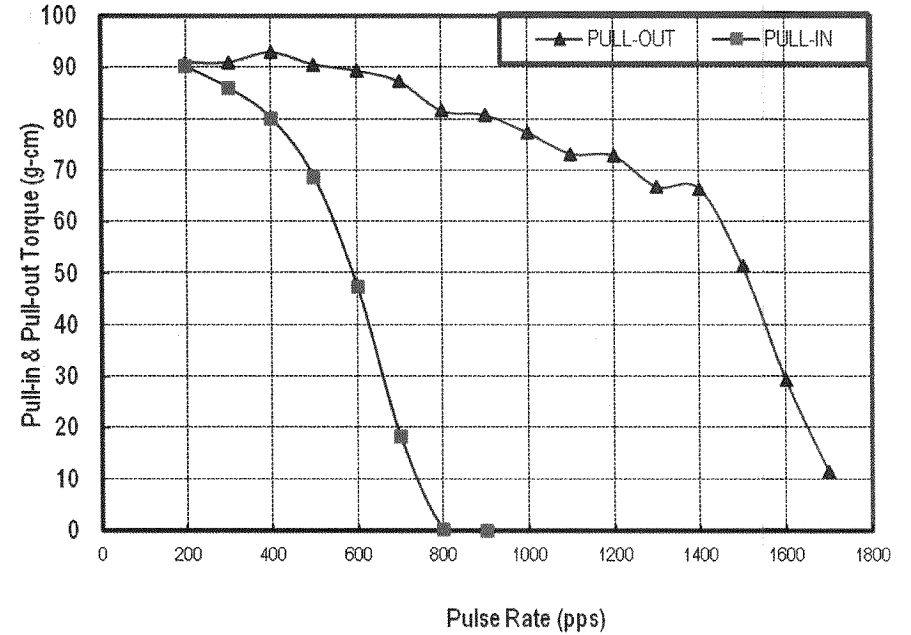
5. RELIABILITY AND WARRANTY

NO.	SPECIFICATION	REMARKS
5.1	3,000 Hours min.	<ol style="list-style-type: none"> Normal Operating Conditions Full-Step @600RPM, CW, Rated voltage, Rated current and Rated load No Unusual Vibration & Noise Satisfactory Electrical & Mechanical Characteristics
5.2	Satisfactory Electrical & Mechanical Characteristics	<ol style="list-style-type: none"> Vibration Test at Motor 0 ~ 100 Hz Sweep for 5 Minutes 1.5 mm, 3 Directional Amplitude for 30 Minutes
5.3	Satisfactory Electrical & Mechanical Characteristics	<ol style="list-style-type: none"> Shock Test at Package 30 G, 3 Directions each for 1 time

6. REMARKS

6.1	An abnormal operation may extremely shorten the performance or service life.
6.2	Do not hold the motor by lead wire or PCB.
6.3	The motor is subject to change for improving the performance within the range satisfying its specification.

MOONS' PM STEPPING MOTOR CHARACTERISTICS
20PM020LG-00702 (Rev. D)
 Constant Voltage 12V Rated Current 0.43 A Bipolar Full-Step 3540M Driver



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1 2 3 4 5 6 7 8

A

B

C

D

E

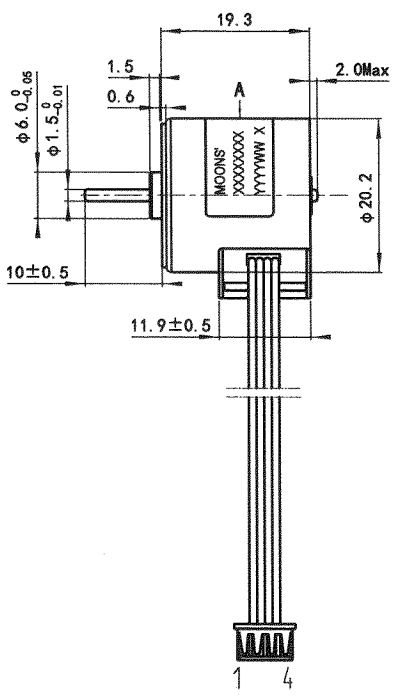
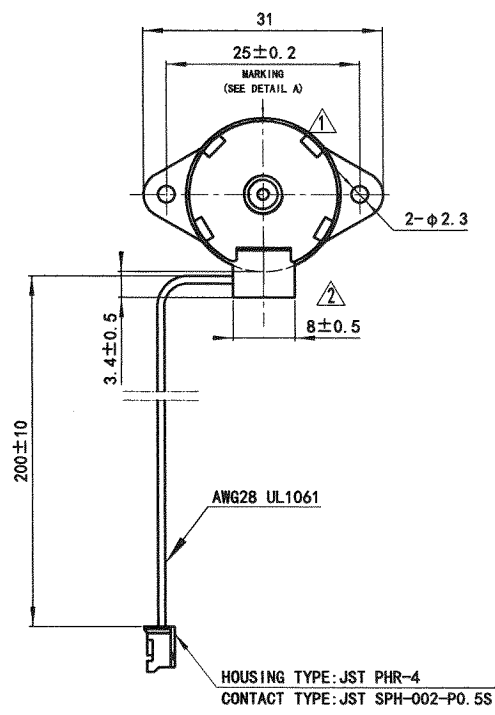
A

B

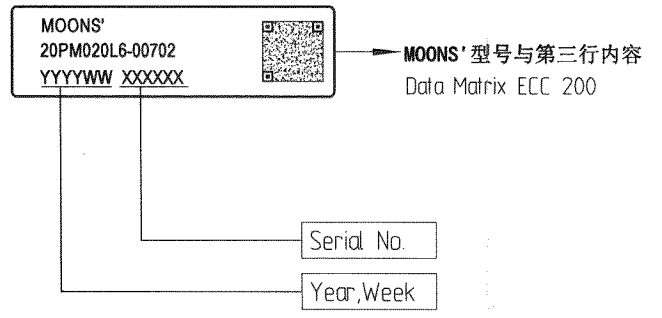
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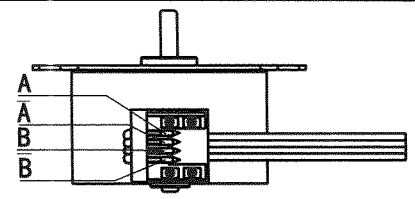
DETAIL A:



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CONNECTOR PIN LOCATION						
PIN NO.	COLOR	CCW ← → CW (SEEN FROM FLANGE SIDE)				PHASE
		1	BLACK	ON		
2	BROWN		ON	ON		\bar{A}
3	ORANGE	ON	ON		ON	B
4	YELLOW			ON	ON	\bar{B}

电机接线图



Rev.	更改记录 Record for Changing	Date	UNLESS OTHERWISE SPECIFIED	TYPE
D	Electrical characteristics and P/N changed	19.04.29	单位 Unit: 毫米 mm 比例 Scale: 1:1 第一角画法 First angle method	Approve
C	Cover changed	19.02.26	未注线性与角度尺寸公差 Tolerances for linear and angular dimensions without individual tolerance indications GB/T 1804-m eqv ISO 2768-1:m	Standard
B	Rear panel changed	17.11.29	未注形状与位置尺寸公差 Geometrical tolerance for features without individual tolerance indications GB/T 1184-K eqv ISO 2768-2:K	Technology
A	原始版本 Original revision	18.05.22		Check
				Design 韩晨 19.04.29

备注 Remarks

1 2 3 4 5 6 7 8

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