



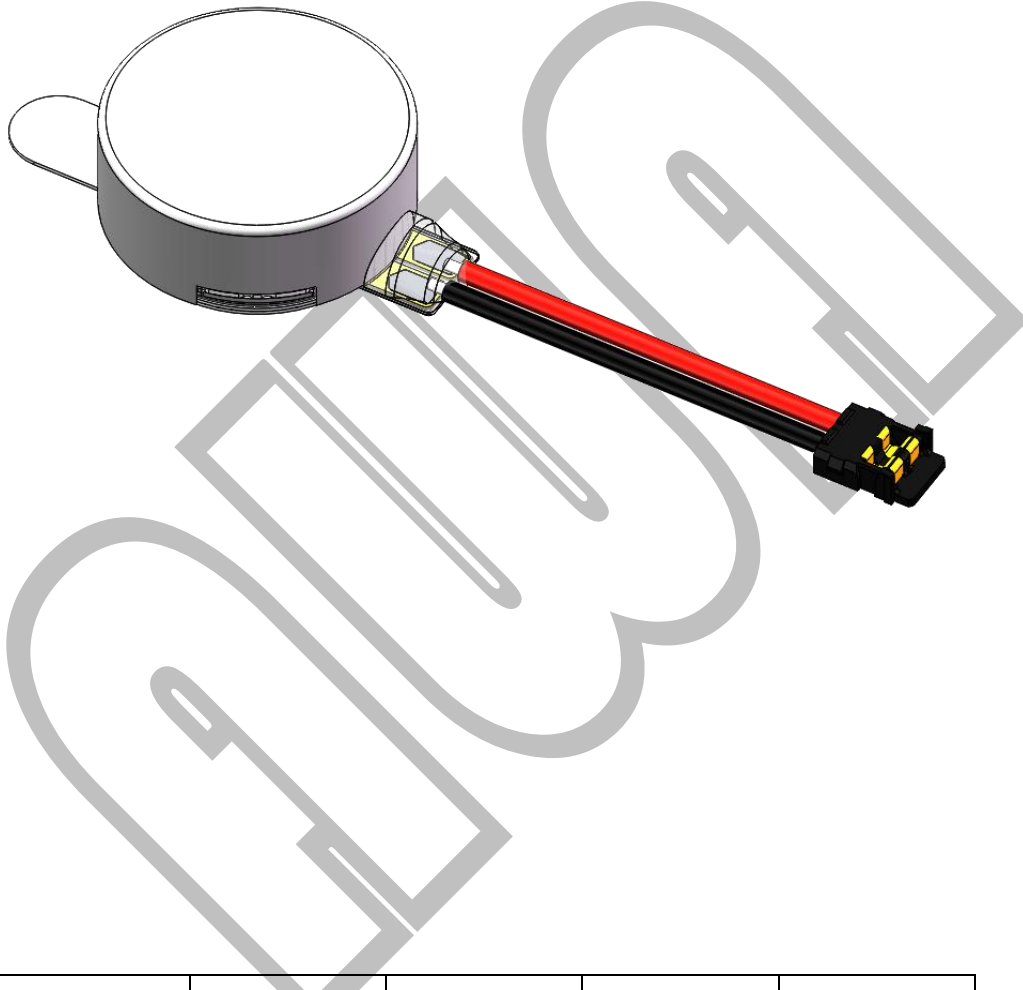
SPECIFICATION



P/N : CZ-EACQ

Version : Draft1.1

Model name : CZ-EACQ

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CUSTOMER ACCEPTANCE	APPROVAL	CHECK	DESIGN	DATE
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1. Applications

This specification provided by AWA is applied to model CZ-EACQ $\Phi 8 \times 3.25T$ AC linear resonant actuator, which is used for cellular phone and other handy communication tools.

2. Storage, Operating Temperature/Humidity Conditions

No.	Item	Condition
2-1	Operating Temperature Range	-15 °C ~ +55 °C
2-2	Storage Temperature Range	-20 °C ~ +60 °C
2-3	Operating Humidity Range	Max 65%RH
2-4	Storage Humidity Range	Max 65%RH

3. Measurement Conditions, Input Voltage

No.	Item	Condition
3-1	Temperature	20 °C \pm 5 °C
3-2	Humidity	65%RH \pm 20%RH
3-3	Rated Input Voltage	1.8 \pm 0.05 Vrms AC, Sinewave
3-4	Input Voltage Range	0.1 ~ 1.85 Vrms AC
3-5	Operating Attitude	Refer to Figure

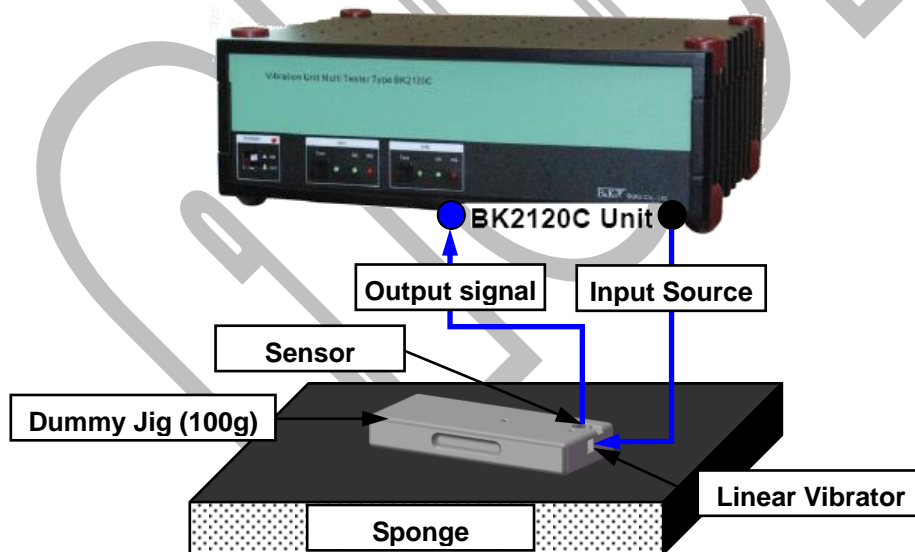


Figure 1. Measurement Method of Linear Vibrator

※. Notes:

- Dummy Jig(105mm*45mm*15mm, 100 gram) should be put it on the sponge before measurement.
- Linear Vibrator should be mounted to the Dummy Jig's edge center.
- Also, Accelerometer should be mounted to the Dummy Jig's corner.
- At measurement of acceleration, Dummy Jig should be stabilized.



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4. Characteristics

Measurement standard refer to No.3 Measurement Conditions

No.	Item	Specifications	Conditions & Remarks
4-1	Motor Diameter	$\Phi 8 \pm 0.1$ mm	(Refer to appendix 1)
4-2	Motor Height	3.25 ± 0.05 mm	(Refer to appendix 1)
4-3	Weight	1.00 ± 0.1 Gram	Motor Ass'y (Connector Type)
4-4	Resistance	$22.5 \pm 10\%$ Ω	
4-5	Rated Current	Max 80 mArms	Input source : F0, 1.8Vrms AC, sine wave
4-6	Vibration Acceleration	1.40 ± 0.2 Grms	Input source : F0, 1.8Vrms AC, sine wave 100g Dummy Jig (Refer to figure 1)
4-7	Operating Frequency	235 ± 5 Hz	
4-8	Noise	Max 50 dB(A)	10cm distance from microphone, Input source : F0, 1.8Vrms AC, sine wave
4-9	Noise by mechanical touch (Noise_T)	Max 35 dB	Input source : F0, 1.8Vrms AC, sine wave
4-10	Insulation Resistance	Min 10 M Ω	100V DC input, between Case and Connector-wire
4-11	Rising Time	Max 50 msec	From 0 to 50% of nominal vibration Input source : F0, 1.8Vrms AC, sine wave
4-12	Falling Time	Max 80 msec	From 100% to 50% of nominal vibration Input source : F0, 1.8Vrms AC, sine wave

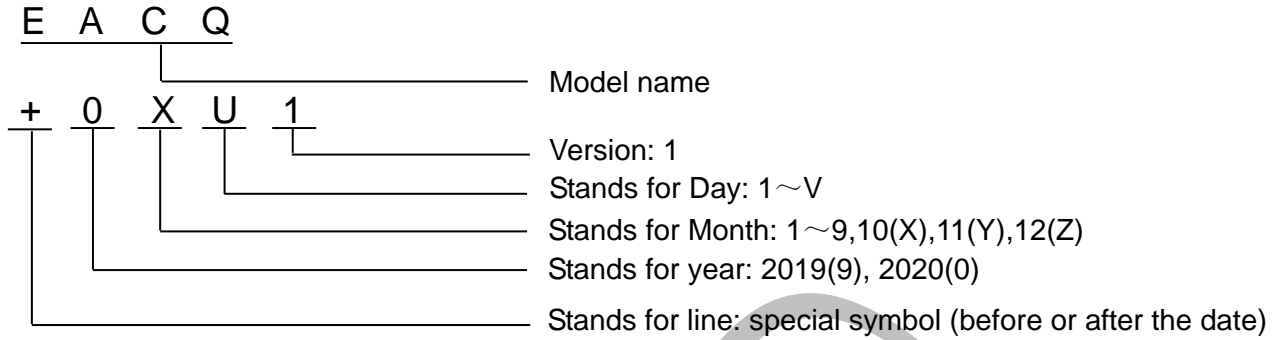
5. Reliability test

No.	Item	Conditions
5-1	Life test	Operating at rated input voltage (1.8Vrms AC, Sinewave), input frequency (235Hz) for 200,000cycle, on(2sec)/off(1sec).
5-2	Thermal shock test	-40 °C ~ 85 °C in each of 2Hrs(1cycle), Total 15cycles. Transition time is 5 minutes max. After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
5-3	High temperature storage test	+70 °C, 168Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
5-4	Low temperature storage test	-30 °C, 168Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
5-5	Static humidity test	+50°C, 95%RH, 120Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
5-6	Mechanical shock test	The Vibrator that is attached to a 150 gram dummy jig is dropped to a steel floor 18 times(6face, 3times in each of X,Y,Z axis) from 1.5 meters in height.
5-7	Vibration test	The Vibrator that is attached to a 150 gram dummy jig is vibrated with 2.2G, 10~55Hz/min for 10minutes in each of X,Y,Z axis.

※. Judgement

- ① . After test, following specifications must be satisfied.
 - Acceleration : Initial value $\pm 30\%$
 - Rated Current : Max 80 mArms
 - Noise_T : Max 35 dB
- ② . There should be no abnormalities in appearance and structure.

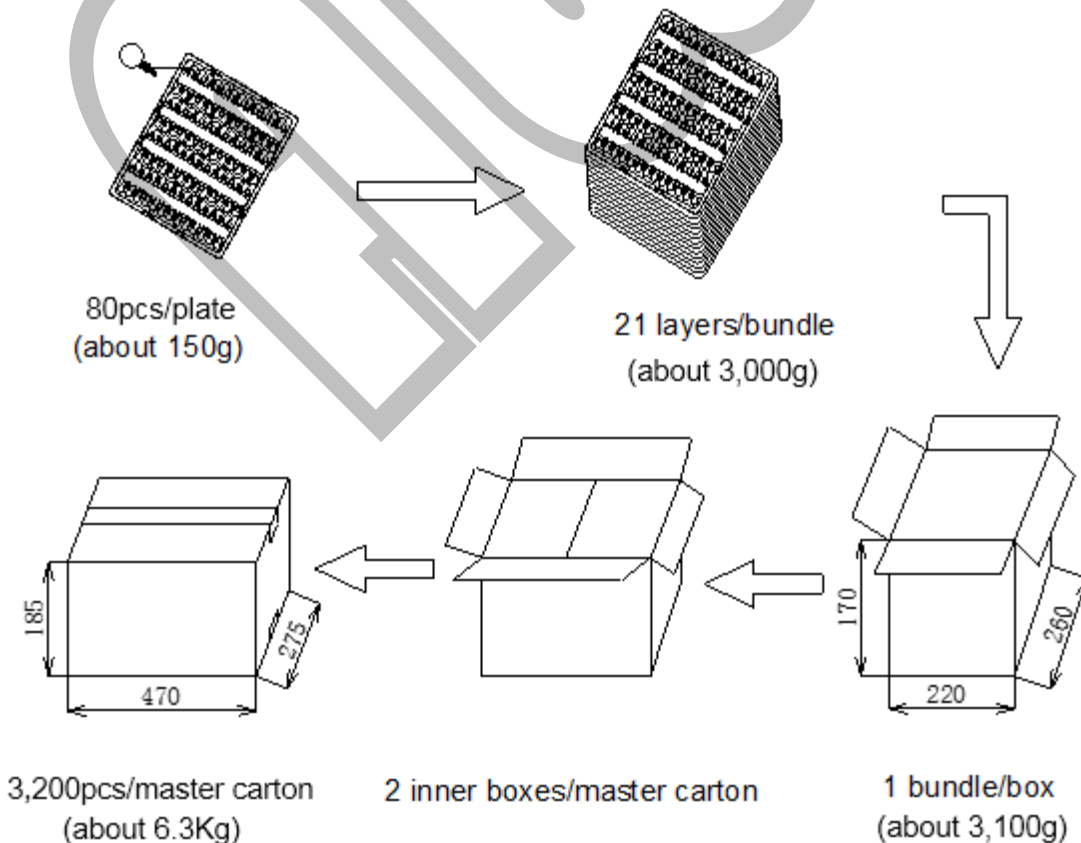
6. Lot management



Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Print	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G
Day	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Print	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	

Version	1	2	3	4	5	6	7	8	9	10	11
Print	1	2	3	4	5	6	7	8	9	A	B

7. Packing



8. Cautions & Handling

(1) Do not press the product with more than 0.5 kgf or drop it.

It can cause the transformation of performance or external appearance.

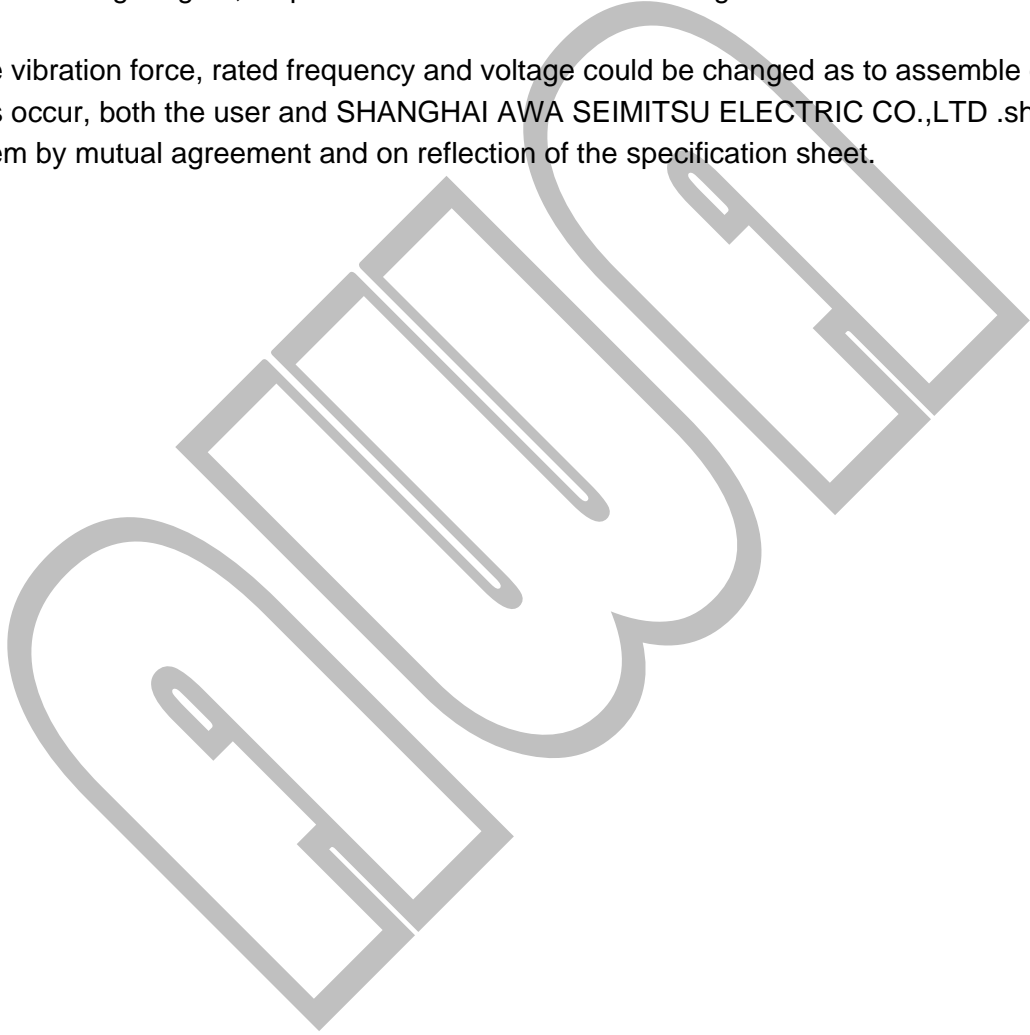
(2) Don't use under the following conditions. It may cause a decline in performance.

- Do not drop into fluid (such as: water, alcohol, etc.)
- Do not keep at high temperature or high humidity for extended periods of times
- Do not use near gases which cause erosion
- Please refrain from operating the vibrator near magnetic devices.

(3) The vibrator has a strong magnet, so please be aware that it has a magnetic force on the surface of the bracket.

(4) To optimize the vibration force, rated frequency and voltage could be changed as to assemble condition.

(5) If any problems occur, both the user and SHANGHAI AWA SEIMITSU ELECTRIC CO.,LTD .shall try to solve the problem by mutual agreement and on reflection of the specification sheet.



9.Appendix 1 (Outline drawing)

