

# **User's Manual**

**(M/N:SKM-2040)**

Sejin Electron Inc.

## **FCC NOTICE**

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.  
OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITION:  
(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND  
(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED,  
INCLUDING INTERFERENCE THAT MAY CAUSE UNDERSIRED  
OPERATION.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer of an experienced radio/TV technician for help.

NOTE : The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

## 1. SCOPE

This document describes the detail specifications for SEJIN's SKM-2040 keyboard.

## 2. MECHANICAL SPECIFICATION

### 2.1 KEYSWITCH(MA-41)

OPERATING SYSTEM : non-lock tactile back.

TRAVEL AMOUNT :  $3.8 \pm 0.5$ mm with measuring load of 200gf applied.

OPERATING FORCE :  $60 \pm 25$ gf

LIFE : exceed 10 million operations.

### 2.2 KEY TOP

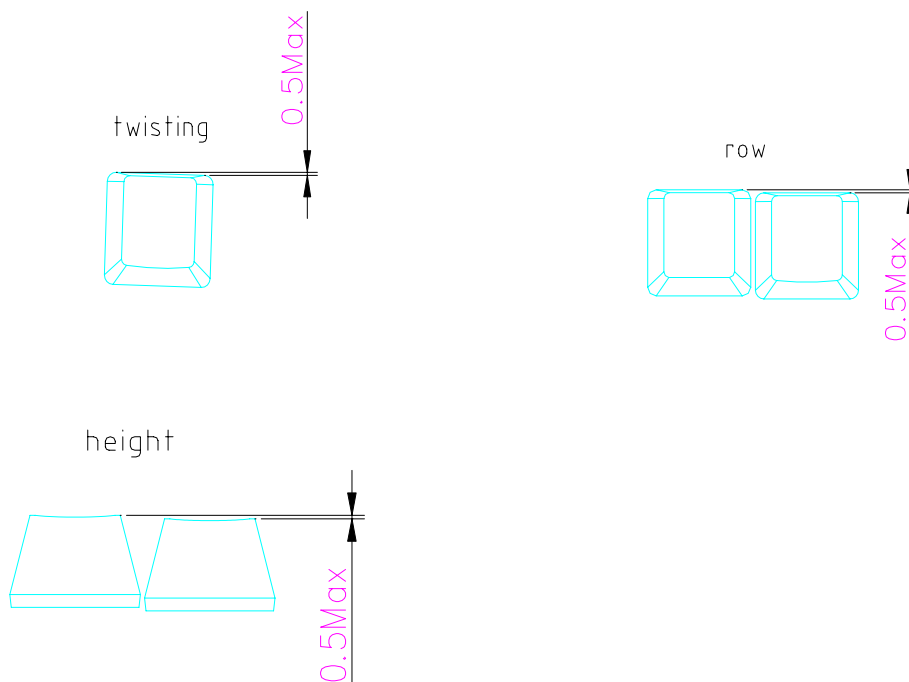
The keytop pull out force shall be 0.5kg or more at normal temperature during initial state.

The keytop shall be not pulled out by an ordinary typing operation.

### 2.3 KEYTOP DEFLECTION

Keytop deflection to on side shall be 0.8mm or less.

### 2.4 VARIATIONS IN KEYTOPS



2.5 KEYTOP AND KEY ARRANGEMENT : according to the attached drawing.

2.6 SLOPE OF KEYTOP : step sculpture type.

### 3. ELECTRICAL SPECIFICATION

POWER SUPPLY VOLTAGE : +4.75 ~ +5.25V DC

POWER SUPPLY CURRENT CONSUMPTION : 250Ma max

SIGNAL INPUT VOLTAGE : -0.5 ~ +5.5V

KEY SWITCH MAXIMUM RATING : 5V DC 5Ma resistance load

CONTACT RESISTANCE : 800 ohm or less

KEY SWITCH INSULATION RESISTANCE : 100M ohm or more between terminal(at 250V DC)

KEY SWITCH VOLTAGE : 250V AC(50/60 Hz)

#### OPERATING METHOD

- NORMAL OPERATION

The operating force of 3kg Max, shall be applied at the rate of 3 to 6 times a second from any point within the region 45° conical to the vertical axis of key stem.

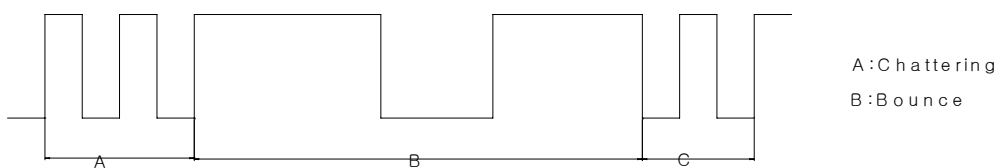
- SLOW OPERATION

The operating 1kg shall be applied at the rate of once a second from any point within the region 45° conical to the vertical axis of the key stem.

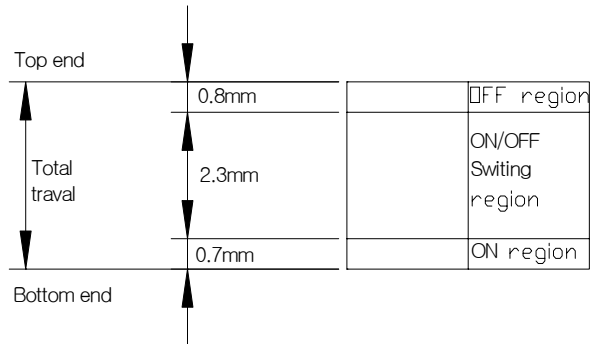
#### CHATTERING AND BOUNCE

Operating force shall be applied according to Item OPERATING METHOD at 12V DC, 0.2mA.

There shall be no bounce and chattering should be within 10msec when measured using the specially prepared chattering tester or synchroscope. Chattering and bounce are defined as shown below.



## OPERATION REGION



## 4. CONFIGURATION

The keyboard comprises the key switch section and signal processing circuit.

The keyboard cable connects to the system with a 6-pin MINI DIN connector.

The following table shows the pin configuration and signal assignments.

Description	6 Pin	
Keyboard Clock	5	<p>6 Pin</p>
Keyboard Data	1	
Reserved	2	
Ground	3	
Vcc	4	
Frame GND	Shield	

## 5. ENVIRONMENTAL CHARACTERISTIC

### AMBIENT TEMPERATURE AND HUMIDITY(operational)

Temperature : 0 ~50° C

Humidity : 85% RH (without condensation)

### ALLOWABLE AMBIENT TEMPERATURE AND HUMIDITY(storage)

Temperature : -20 ~ +60° C

Humidity : 95% RH(without condensation)

### VIBRATION

The equipment shall not be damaged electrically and mechanically when the following vibration has been applied to the package keyboard.

The testing method shall be in accordance with 201A of MIL-STD-202E

No. of vibration : 10 ~ 55Hz(to be logarithmically reciprocated for one minute)

Amplitude : 0.5mm(0.02in)

Direction of vibration : direction of X,Y,Z

Time of vibration : 2 hours

### IMPACT

There shall be no abnormality in operation and appearance of the keyboard when an impact of 10G has been applied to package keyboard.

The testing method shall be in accordance with 213B of MIL-STD-202E

## 6. DURABILITY AND RELIABILITY

Every key on the this keyboard shall function stably for mean 10 million cycles key strokes under normal operation