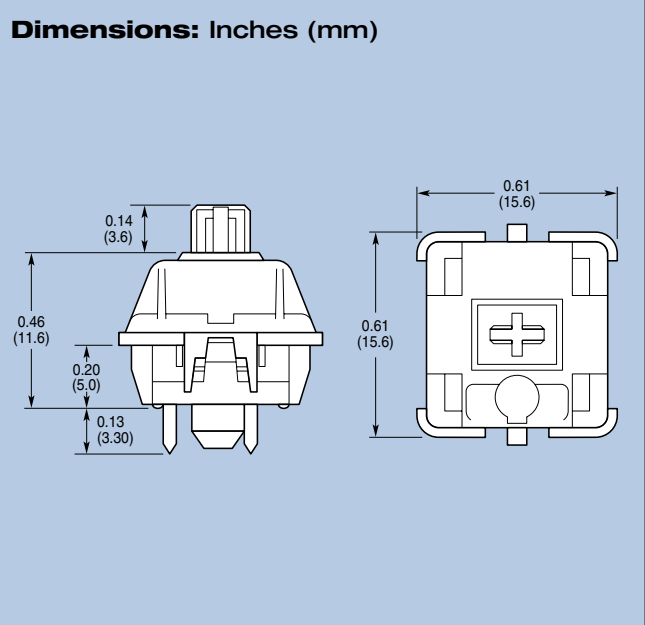
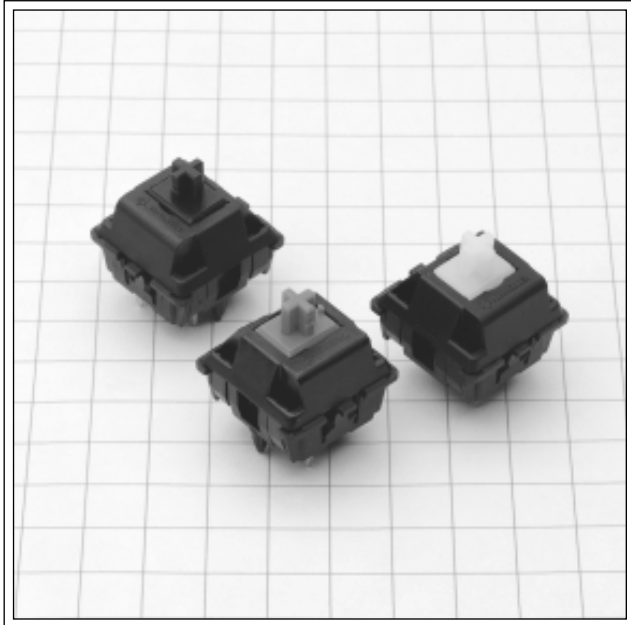


# MX Series

# Keypad

## MX Desktop Profile



## Specifications

Voltage	12 VAC/DC max. 2 VDC min.
Current	10mA AC/DC max. 10 $\mu$ A DC min.
Insulation Resistance	100 M $\Omega$ at 100 VDC
Capacitance	<2pF (at 1kHz)
Bounce Time	$\leq$ 5 msec (at 16 in/sec actuation speed)
Life	(at 5 V, 1mA, no load)
MX Linear	50 x 10 <sup>6</sup> cycles
MX Soft Tactile	20 x 10 <sup>6</sup> cycles
MX Click Tactile	20 x 10 <sup>6</sup> cycles
MX Alternate Action	50 x 10 <sup>5</sup> cycles
Initial Contact Resist.	200 m $\Omega$ (25 m $\Omega$ typical)
Materials	
Plastics	Thermoplastic, UL-rated
Contacts	AuAg 10
Spring	Stainless steel
Flammability Rating	UL94HB
Solderability	Wave solder 5 seconds at 500°F
Environmental	
Operating Temp. Range	-10° to +70°C
Storage Temp. Range	-40° to +70°C
Relative Humidity	5% to 95%, non-condensing

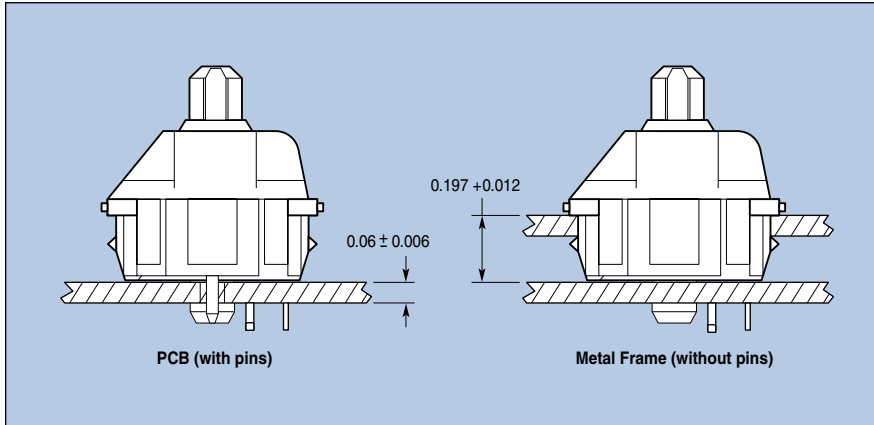
## Mechanical Motion

	Linear Feel	Soft Tactile Feel
Operating Force	2.1 oz $\pm$ 0.7 oz	2.0 oz $\pm$ 0.7 oz
Pretravel	0.08" $\pm$ 0.24"	0.08" $\pm$ 0.24"
Total Travel	0.16" -0.015"	0.16" -0.2"
Tactile Force	N/A	2.3 oz $\pm$ 0.7 oz
	Click Tactile Feel	Alternate Action
Operating Force	1.8 oz $\pm$ 0.5 oz	2.1 oz $\pm$ 0.7 oz
Pretravel	0.09" $\pm$ 0.24"	0.05" $\pm$ 0.015"
Total Travel	0.16" -0.02"	0.16" $\pm$ 0.01"
Tactile Force	2.1 oz $\pm$ 0.5 oz	N/A

# MX Series

# Keypad

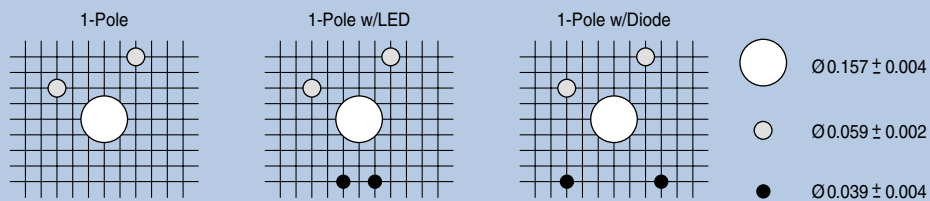
## Mounting Options



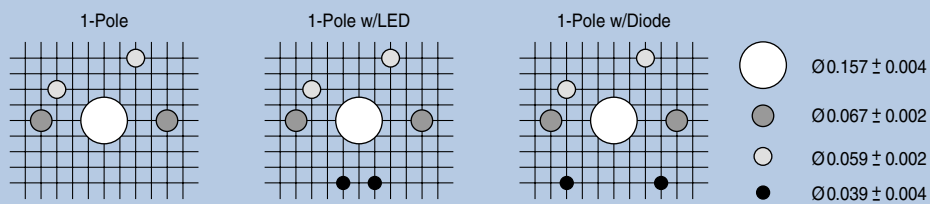
## Circuit Board Layouts

Grid line spacing = 0.05 inch

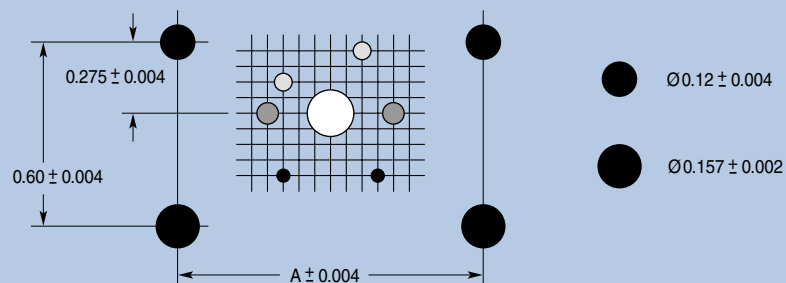
### Keypad without fixation pins



### Keypad with fixation pins



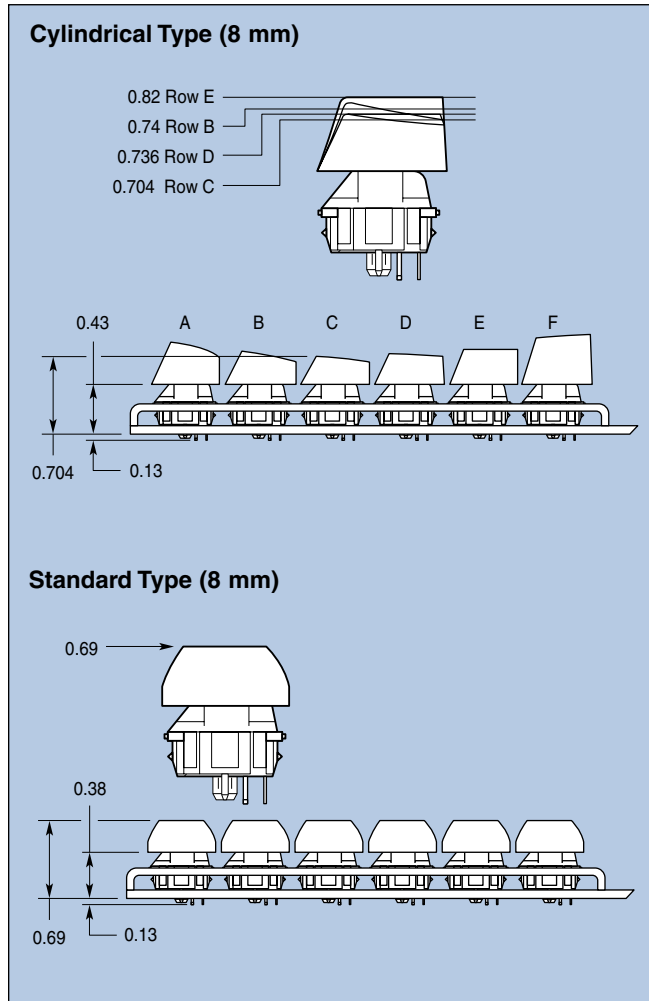
### Spacebar without frame



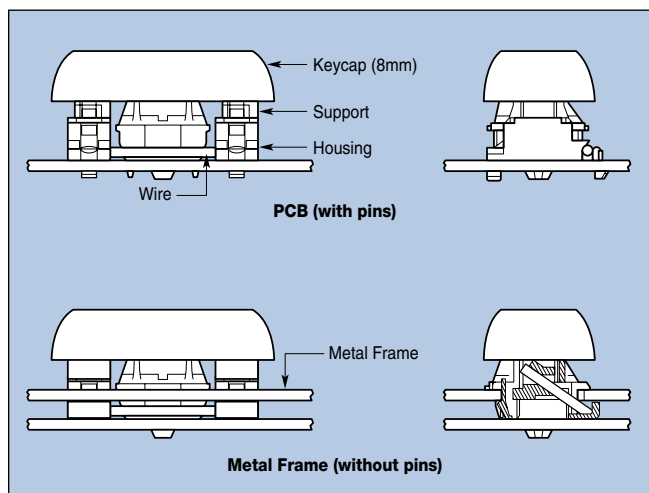
# MX Series

# Keypad

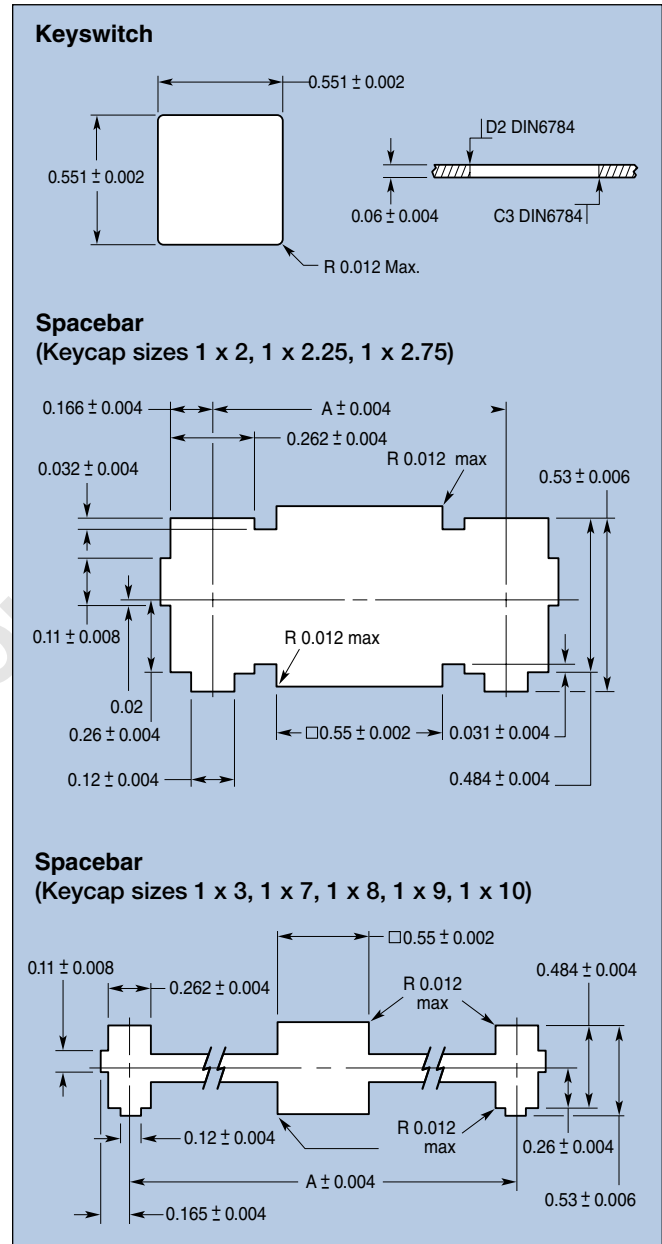
## Keycap Dimensions



## Spacebar Mounting Options



## Metal Frame Cutout Dimensions



## Leveling Mechanism Kits

Keycap Size	1 x 2 1 x 2, 2.5 1 x 2, 2.75	1 x 3	1 x 8	1 x 8 1 x 9 1 x 10	1 x 7
Keycap Type	Std & Cylin	Std & Cylin	Std	Cylin	Cylin
A (inches)	0.94	1.5	5.25	5.25	4.5
P/N w/frame	G99-0224	G99-0225	G99-0226	G99-0226	G99-0379
P/N w/o frame	G99-0742	G99-0743	G99-0744	G99-0744	G99-0745

# MX Series

# Keypad

## Soldering Parameters

### 1. Flux Station

- A. Flux – Fry type GR8
- B. Applied by foaming
- C. Specific gravity – 0.820 g/cm3

### 2. Conveyor Speed

- A. 2.3 meters/min.

### 3. Pre-heat Temperature

- A. +88°C measured on top surface of PCB

### 4. Solder

- A. 63/37 alloy
- B. Dry wave – no oil
- C. Approximate contact with wave – 2 seconds

### 5. Cleaning

- A. Fry GR8 is non-hygroscopic flux and does not require cleaning
- B. If cleaning is required on isolated areas such as finger connector, cold cleaning by hand with Alpha 564 is recommended. Care must be taken to avoid solvent entering the keymodule.

## Ordering Information

Part Number	Description
MX1A-11DN	Standard force, momentary face plate mount with diode
MX1A-11NN	Standard force, linear, face plate mount
MX1A-11NW	Standard force, linear, PCB mount
MX1A-21NW	Higher force, linear, PCB mount
MX1A-31NN	Alternate action, face plate mount
MX1A-31NW	Alternate action, PCB mount
MX1A-C1NN	Standard force, soft tactile, face plate mount
MX1A-C1NW	Standard force, soft tactile, PCB mount
MX1A-E1NN	Standard force, click tactile, face plate mount
MX1A-E1NW	Standard force, click tactile, PCB mount

## Ordering Information

