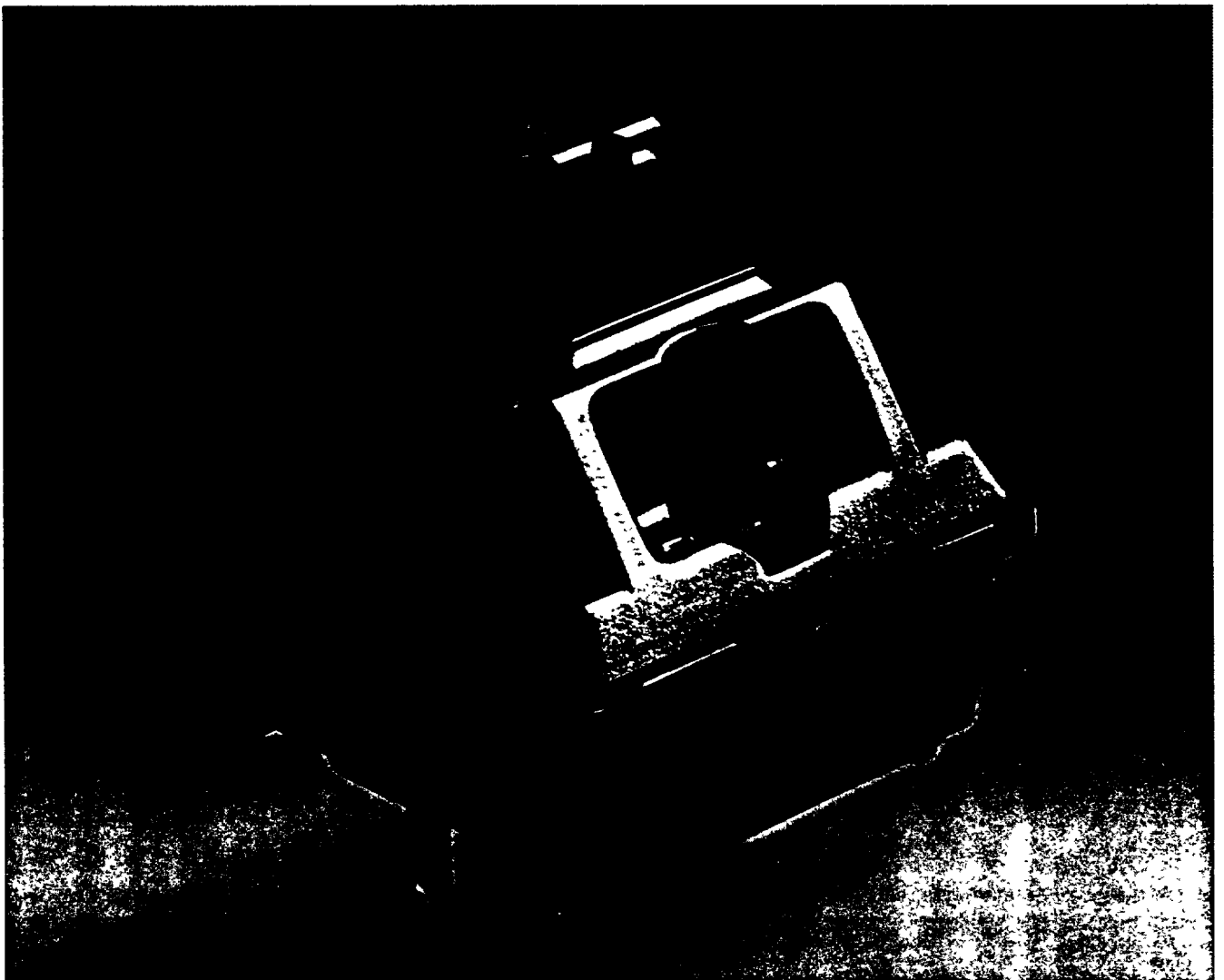
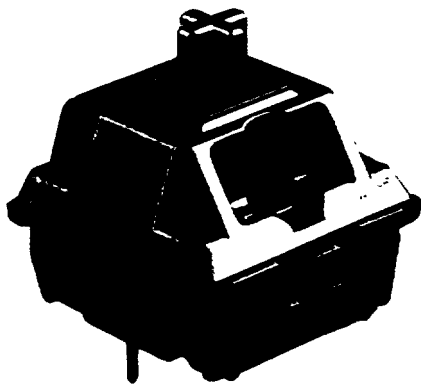


Keymodule MX.

**Modern Technology
for ergonomic Keyboards.**





Main Advantages

- The MX is a modern full-travel low-profile keyswitch.
- »Gold Crosspoint« Contacts ensure highest reliability.
- The keyswitch module is designed to meet all current ergonomic standards demanded for word and data processing applications.
- High reliability also during quick actuation.
- Switch options include integrated color LED, de-coupling diode and wire jumper.
- MCBF = 1×10^9

Important Features

- Switch versions include momentary and alternate action as well as linear or tactile feel.
- 4 mm full travel.
- Circuitry S.P.S.T. – N.O.
- Connector pins constructed for machine soldering.
- Switches can be snapped into a frame or mounted directly onto the printed circuit board.
- Low contact resistance.

- Standard spacing 19.05 mm (upon request ≥ 16 mm).
- Low-profile height from base of keyboard to top of keycaps in homerow using cylindrical keycaps < 30 mm.

Technical Data

Material – plastic parts _____ Thermoplastic UL-recog.-comp.
 – contacts _____ AuAg 10
 – spring _____ Stainless steel.

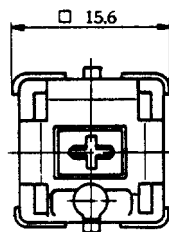
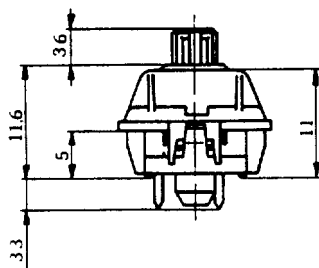
Protection _____ DIN 40050 IP 40.

Storage Temperature _____ -40°C (-40°F) to $+70^{\circ}\text{C}$ ($+158^{\circ}\text{F}$).

Operating Temperature _____ -10°C ($+14^{\circ}\text{F}$) to $+70^{\circ}\text{C}$ ($+158^{\circ}\text{F}$).

Humidity _____ 5% – 95% w/o cond.

Solderability _____ applicable for machine soldering 5 sec. at 260°C .



Mechanical Data

	Keyswitch with linear actuation	Keyswitch with soft tactile feel	Keyswitch with click tactile feel	Keyswitch with alternate action
Total travel	4-0.4 mm	4-0.5 mm	4-0.5 mm	4.2 ± 0.3 mm
Pretravel	2 ± 0.6 mm	2.0 ± 0.6 mm	2.2 ± 0.6 mm	1.4 ± 0.4 mm
Operating force	60 ± 20 cN	55 ± 20	50 ± 15 cN	60 ± 20 cN
Tactile force	-	65 ± 20	60 ± 15 cN	-

Electrical Data

Voltage _____ 12V max. AC/DC; 2V min. DC

Current _____ 10mA max. AC/DC; 10 mA min. DC

Insulation resistance _____ new/ 100 MΩ

Capacity at 1 MHz _____ ≤ 1 pF

Bounce time at actuation speed 0.4 m/s _____ ≤ 5 ms

Life cycle w/o electrical load/at 5V, 1mA

- MX linear _____ 50 × 10⁶ operations

- MX soft _____ 20 × 10⁶ operations

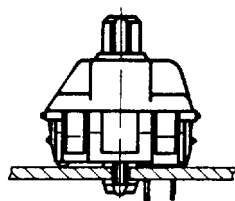
- MX click _____ 20 × 10⁶ operations

- MX alternate action _____ 500 000 alternate operations

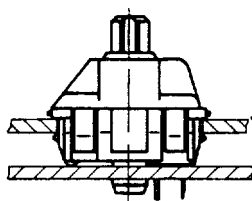
Initial contact resistance _____ 200 mΩ (typ. 25 Ω)

Keyswitch Assembly

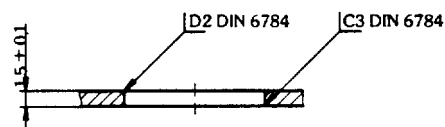
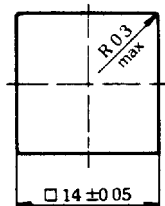
Direct PCB-mounting onto metal frame



with pins



without pins



Force/Travel Diagram

