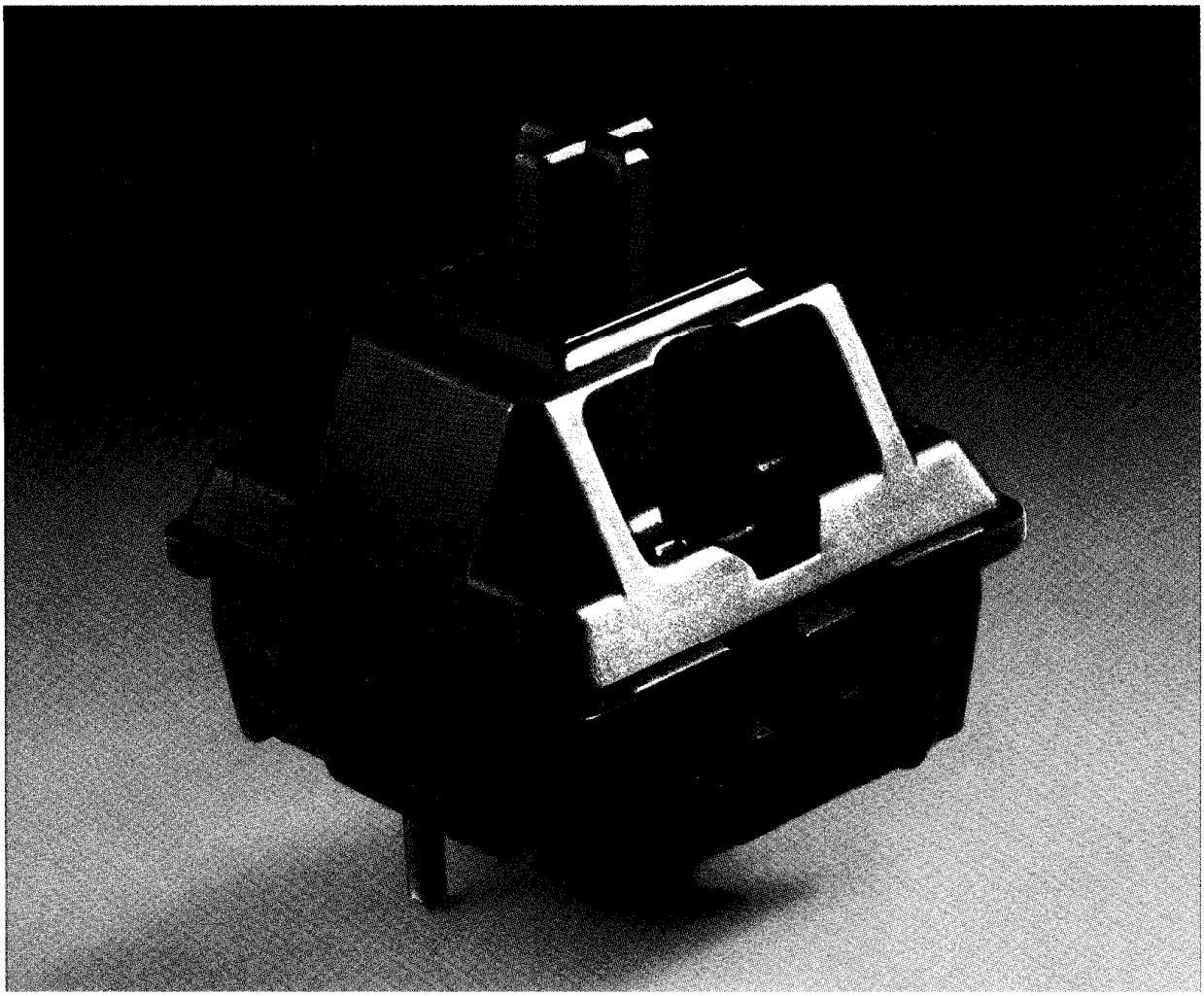
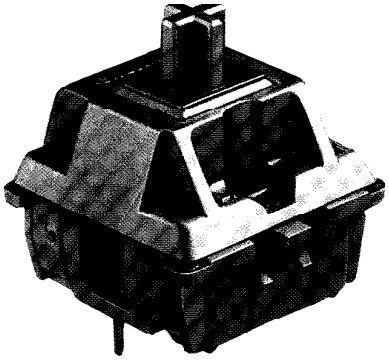
CHERRY

Keymodule MX.

Modern Technology for ergonomic Keyboards.



Printed on special environmentally friendly paper.



Main Advantages

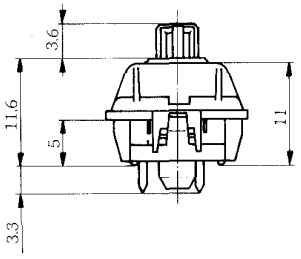
- The MX is a modern full-travel low-profile keyswitch.
- »Gold Crosspoint« Contacts ensure highest reliability.
- The keyswitch module is designed to meet all current ergonomic standards demanded for word and data processing applications.
- High reliability also during quick actuation.
- Switch options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

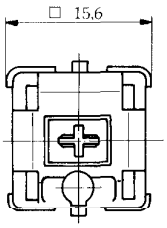
Important Features

- 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 IP40.
Storage Temperature	–40° C (–40° F) to +70° C (+158° F).
Operating Temperature	–10° C (+14° F) to +70° C (+158° 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	Keyswitch with tactile feel (ergonomic)
Total travel	4 – 0.4 mm	4 – 0.5 mm	4 – 0.5 mm	4.2 ± 0.3 mm	4 – 0.4 mm
Pretravel	2 ± 0.6 mm	2.0 ± 0.6 mm	2.2 ± 0.6 mm	1.4 ± 0.4 mm	2 ± 0.6 mm
Operating force	60 ± 20 cN	55 ± 20	50 ± 15 cN	60 ± 20 cN	45 ± 20 cN
Tactile force	–	65 ± 20	60 ± 15 cN	–	55 ± 20 cN

Electrical Data

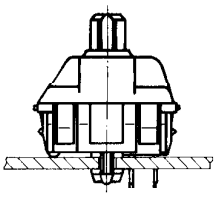
Voltage ____ 12 V max. AC/DC; 2 V min. DC
Current ____ 10 mA max. AC/DC; 10 µA min. DC
Insulation resistance ____ new/100 M Ω
Capacity at 1/kHz ____ < 2 pF
Bounce time at actuation speed 0.4 m/s ____ ≦ 5 ms

Life cycle w/o electrical load/at 5 V, 1 mA
- MX linear ____ 50 x 10^6 operations
- MX soft ____ 20 x 10^6 operations
- MX click ____ 20 x 10^6 operations
- MX alternate action ____ 500 000 alternate operations
- MX ergonomic ____ 50 x 10^6 operations

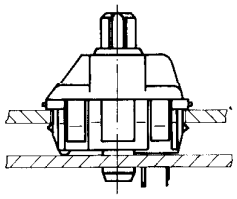
Initial contact resistance ____ 200 m Ω (typ. 25 m Ω)

Keyswitch Assembly

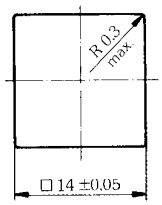
Direct PCB-Mounting onto metal frame

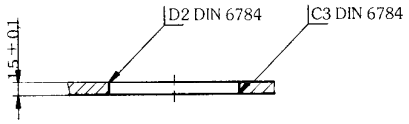


with pins

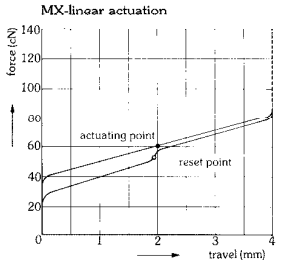


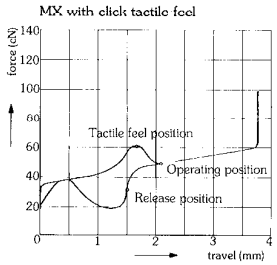
without pins

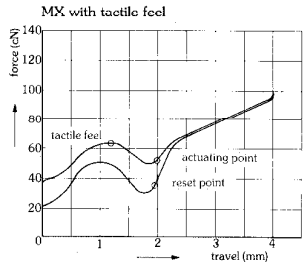


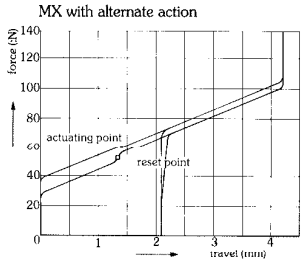


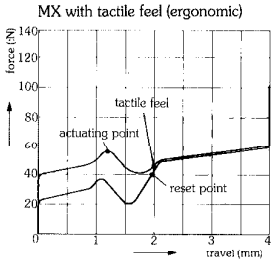
Force/Travel Diagram





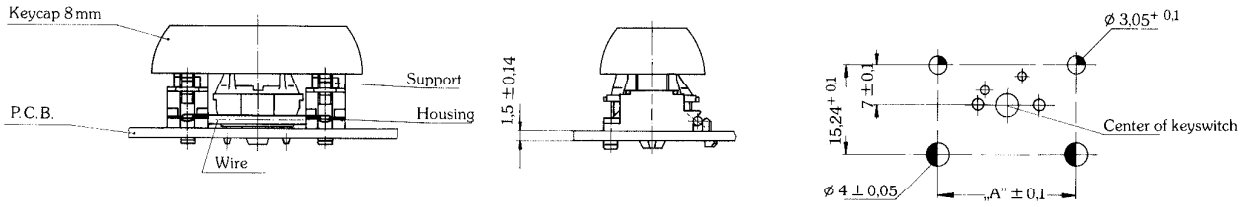




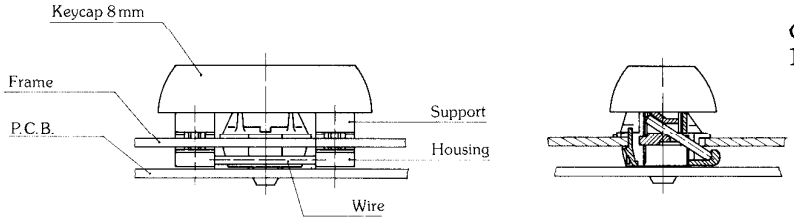


Spacebar Mechanism

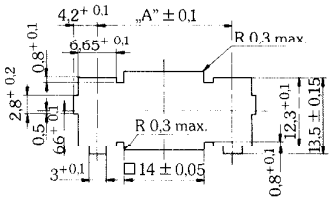
w/o frame



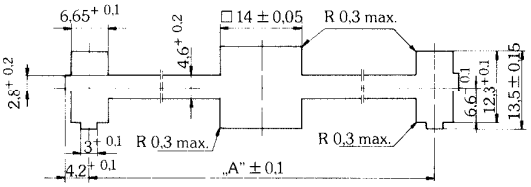
with frame



Cutout of frame for keycap sizes
1x2, 1x2,25, 1x2,75



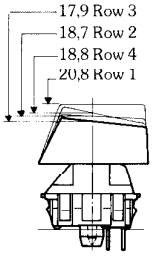
Cutout of frame for keycap sizes
1x3, 1x7, 1x8, 1x9, 1x10



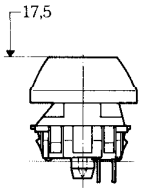
Size of keycap	1x2 1x2,25 1x2,75	1x3	1x8	1x8 1x9 1x10	1x7
Type of keycap	8 mm Cyln.	8 mm Cyln.	8 mm	Cyln.	Cyln.
"A" (in mm)	23,8	38,1	133,35		114,3
Part No. with frame	G99-0224	G99-0225	G99-0226		G99-0379
Part No. w/o frame	G99-0742	G99-0743	G99-0744		G99-0745

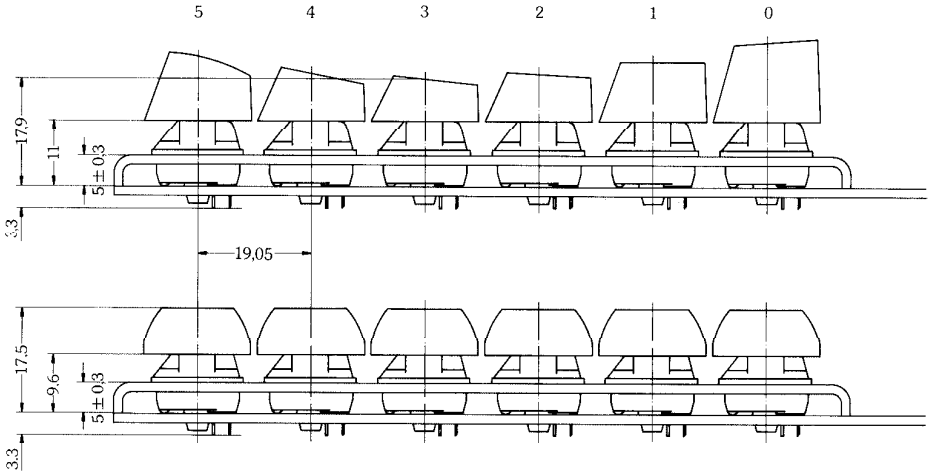
Keycaps

Cylindrical type (7 mm)

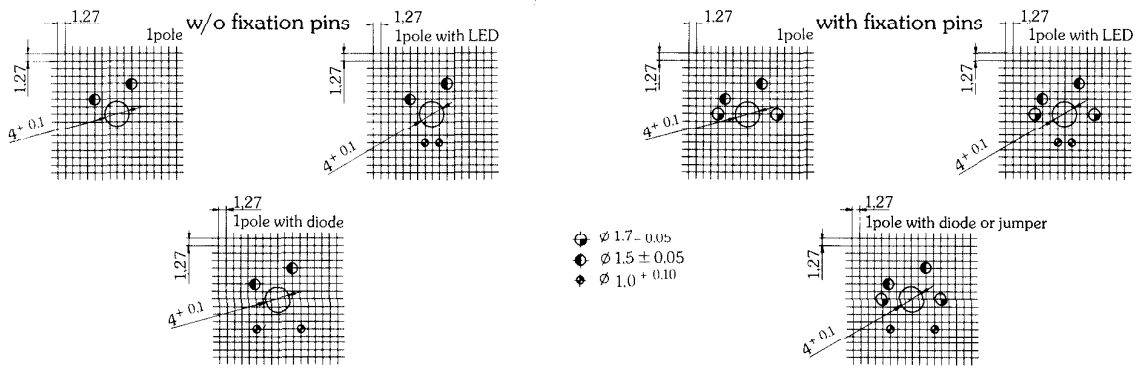


Standard type (8 mm)

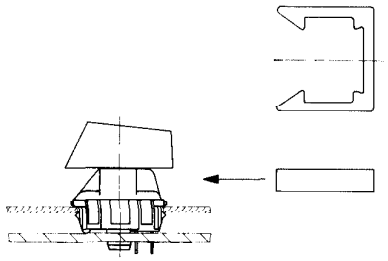




Layout of P.C.B.



Locking Unit

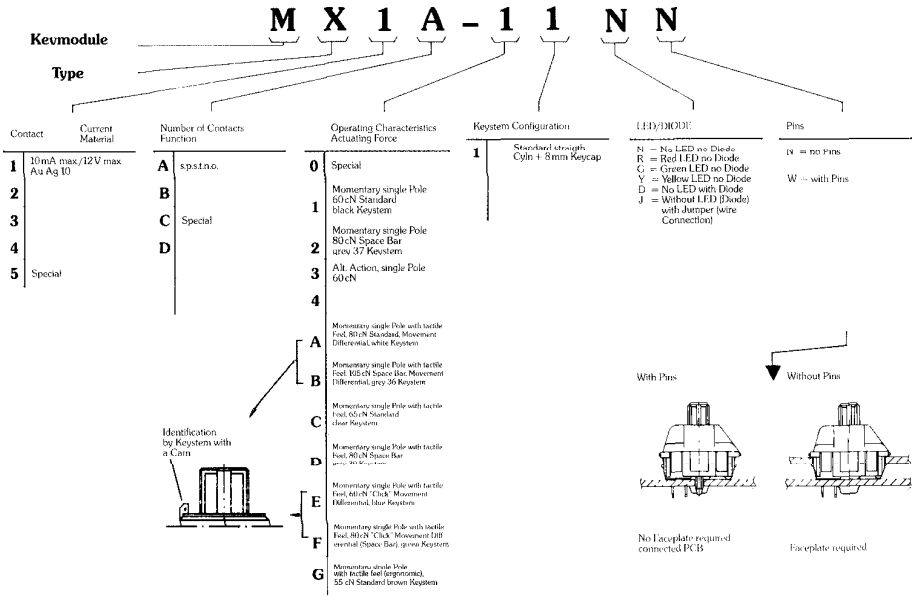


Locking Device
for MX Keyswitches

Locking Device for the following Keycaps

Part. No.	Cyln.	8 mm
604-0323	x	
604-0324		x

Index System



Keymodule

Type

M X 1 A - 1 1 N N

Contact	Current Material
1	10 mA max./12 V max Au Ag 10
2	
3	
4	
5	Special

Number of Contacts Function	
A	s.p.s.t.n.o.
B	
C	Special
D	

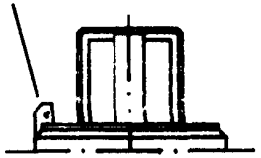
Operating Characteristics Actuating Force	
0	Special
1	Momentary single Pole 60 cN Standard black Keystem
2	Momentary single Pole 80 cN Space Bar grey 37 Keystem
3	Alt. Action, single Pole 60 cN
4	
A	Momentary single Pole with tactile Feel, 80 cN Standard, Movement Differential, white Keystem
B	Momentary single Pole with tactile Feel, 105 cN Space Bar, Movement Differential, grey 36 Keystem
C	Momentary single Pole with tactile Feel, 65 cN Standard clear Keystem
D	Momentary single Pole with tactile Feel, 80 cN Space Bar grey 39 Keystem
E	Momentary single Pole with tactile Feel, 60 cN "Click" Movement Differential, blue Keystem
F	Momentary single Pole with tactile Feel, 80 cN "Click" Movement Differential (Space Bar), green Keystem
G	Momentary single Pole with tactile feel (ergonomic), 55 cN Standard brown Keystem

Keystem Configuration	
1	Standard straigth Cyln + 8 mm Keycap

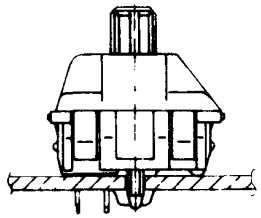
LED/DIODE
N = No LED no Diode
R = Red LED no Diode
G = Green LED no Diode
Y = Yellow LED no Diode
D = No LED with Diode
J = Without LED (Diode) with Jumper (wire Connection)

Pins
N = no Pins
W = with Pins

Identification by Keystem with a Cam

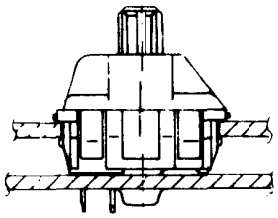


With Pins



No Faceplate required connected PCB

Without Pins



Faceplate required