Keymodule

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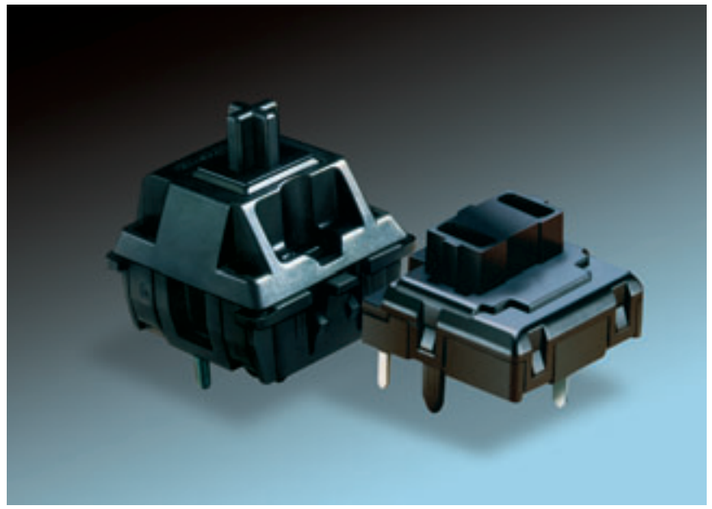
Contents

Keymodule

Cherry key modules are mechanical input elements with a single-gap make contact element. Low assembly height, pleasant feel and excellent contact reliability thanks to Gold-Crosspoint contact technology allow flexible designing of low-cost keypads and keyboards. Depending on the key cap, different lead spacings are also possible.

Very short bounce times, very pleasant feel and exceptionally high reliability and durability pave the way for a wide range of applications.



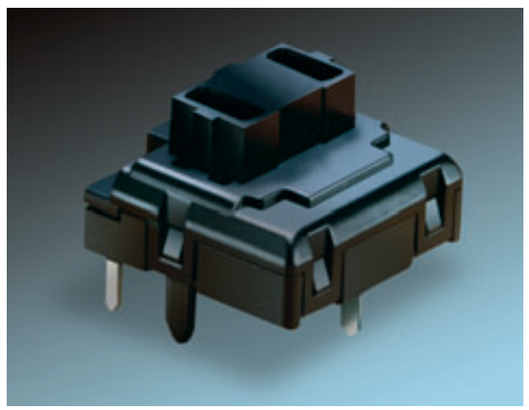
Technical Data

	Model ML	Model MX
Electrical Characteristics		
Switching voltage	12 V AC/DC	12 V AC/DC max, 2 V DC min
Switching current	10 mA AC/DC max, 10 uA DC min.	10 mA AC/DC max, 10uA DC min.
Contact resistance	≤ 200 mW (typically. 25 m)	≤ 200 mW (typically 25 m)
Capacity at 1kHz	≤ pF	≤ pF
Dielectric strength	500 V/50Hz	500 V/50Hz
Isolation resistance (new)	100 MΩ	100 MΩ
Durability at 5V, 1mA linear	–	$50x10^6$ linear
Durability at 5V, 1mA pressure point	$20x10^6$	$50x10^6$ pressure point
Service life at 5V, 1mA latched pushbutton	–	$0,5x10^6$ latched pushbutton
MCBF		$1x10^6$
Mechanical Characteristics		
Number of contacts	Single-gap make contact element	Single-gap make contact element
Action	Pressure point	Linear, pressure point, latching
Actuator travel	3.0 -0.5 mm	4.0 -0.4 mm Pulse / 4.2 ±0.3 mm latching
Pre-travel	1.5 ±0.5 mm	2 ±0.6 mm Pulse / 1.4 ±0.4 mm latching
Initial force	30 cN min	40 cN
Actuation force	45 ±20 cN	60 +20 cN linear and latching; 45 ±20 cN pressure point
Pressure point force	50 ±20 cN	55 ±20 cN
Bounce time during actuation with 0.4 m/s	≤5 ms	≤5 ms
Standard lead spacing	19.05 mm (16 mm min)	19.05 mm (16 mm min)
Fastening	Fixing pins in the printed circuit board	Snap fastening in frame or Fixing pins in the printed circuit board
Lighting (optional)	–	LED in red, green or yellow
Decoupling diode	–	optional
Wire jumper	–	optional
Materials		
Insulation materials	Thermoplastics (min UL 94 HB)	Thermoplastics UL listed
Spring	Stainless steel	Stainless steel
Contacts	AuAg 10	High-quality gold alloy
Other Characteristics		
Protection class	IP 40	IP 40
Operating temperature	-10 °C to +70 °C	-10° C to +70° C
Storage temperature	-40 °C to +70 °C	-40° C to +70° C
Humidity (without condensation)	5% to 95%	5% to 95%
Soldering capability	DIN IEC 68	DIN IEC 68
Soldering temperature/duration	260 °C / 5s	260 °C / 5s

Keymodule ML

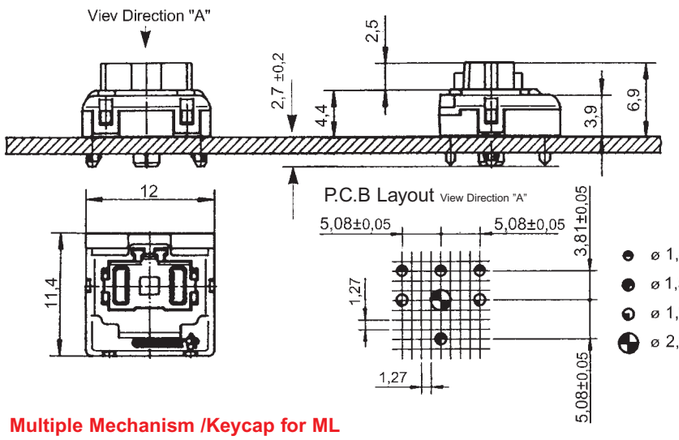
Description

The Cherry ML key module is a mechanical switching element using single-gap make contact element in Gold-Crosspoint contact technology. Its pleasant feel makes the module particularly suitable for low-cost construction of keyboards and keypads with great diversity and very low height. A multitude of different cap shapes allows flexible designs. Very short bounce time, reliable stroke, pleasant feel and enormous cost-savings pave the way for a wide range of applications.

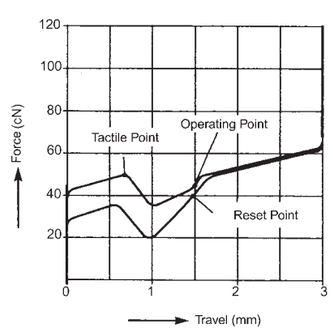


Flat key modules ML

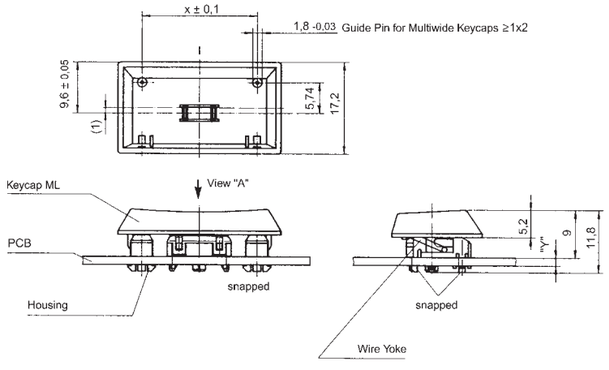
Keymodule Dimensions



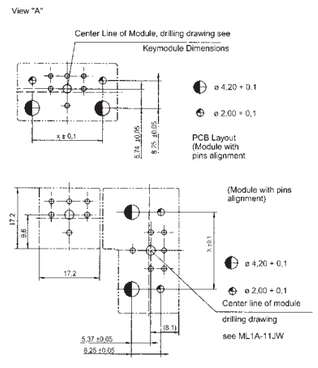
Force Travel Diagram



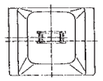
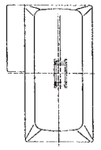
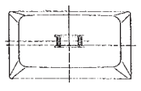
Multiple Mechanism /Keycap for ML



P.C.B. Layout



Keycaps and mechanics

Keymodule	Keycap Format	Ordering-Numbers white-grey	Ordering-Numbers beige-grey	Dimension X	Bar	Assembly number (mechanical parts and bar)
	1x1	6753-0001	6753-0002	-	-	-
	1x0,84	6743-0001	6743-0002	-	-	-
	1x1,25	6753-0008	6753-0003	-	-	-
	1x2 vertikal	6767-0004	6767-0005	25,6	614-5007	G99-1303 ZUB
	1,25x2x1 vertikal	6767-0002	6767-0003	-	-	-
	1,5x2x1,25 vertikal	6767-0007	6767-0008	25,6	614-5007	G99-1303 ZUB
	1x1,5	6763-0011	6763-0010	17,45	614-5004	G99-1300 ZUB
	1x1,53	6763-0004	6763-0003	17,45	614-5004	G99-1300 ZUB
	1x1,75	6763-0008	6763-0001	21,65	614-5005	G99-1301 ZUB
	1x2	6763-0020	6763-0021	25,6	614-5007	G99-1303 ZUB
	1x2,25	6763-0028	-			
	1x5	6763-0002	6763-0009	116,15	614-5010	G99-1370 ZUB
	1x7	6763-0029	-	116,15	614-5010	G99-1370 ZUB

Accessories:
Empty housing Stock code 609-5292

Ordering code:

①	②	③	④	⑤	⑥	⑦
ML	1	A	- 1	1	N	W

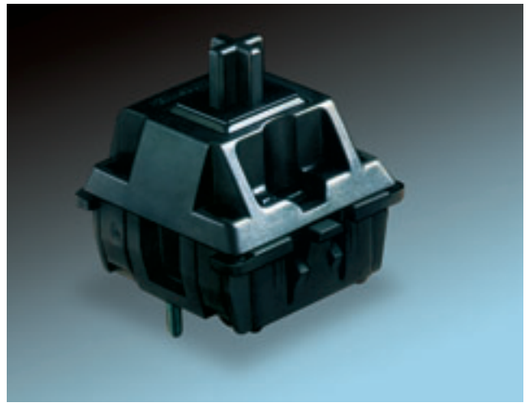
① Series	Type ML
② Contact material	1 = AuAg10 (max.10mA,12V)
③ Contact mounting	A = 1 contact making element
④ Actuation	1 = Linear feel
⑤ Cap support	1 = Standard, straight for 8 mm cap
⑥ Mounting	N = Without jumper
	J = With Jumper
⑦ Fixing pins	W = With Pins

Keymodule MX

Description

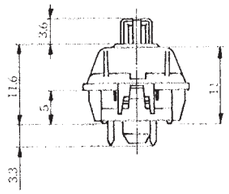
The construction of the key and the design of the relevant key caps fulfill ergonomic requirements for computer workplaces. Long durability thanks to Gold-Crosspoint contacts and high reliability for fast typing. With either integrated color LED decoupling diode or wire jumper.

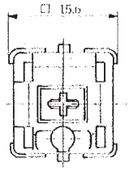
MCBF = $1x10^9$



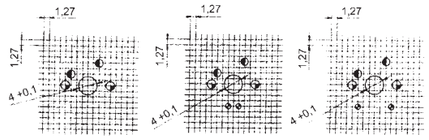
Tastenmodul MX

View of Keymodule





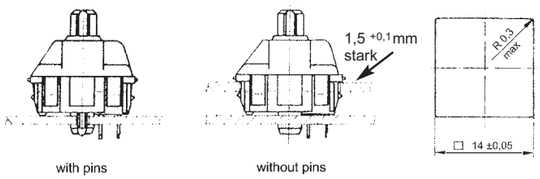
Layout of P.C.B.



Ø 1,7 -0,05 *
Ø 1,5 ±0,05
Ø 1,7 +0,10

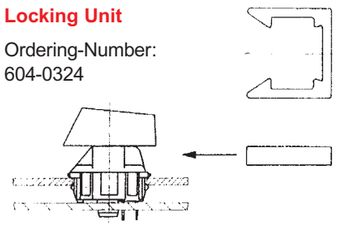
* nur für Ausführung mit Fixierpin

Keyswitch Assembly



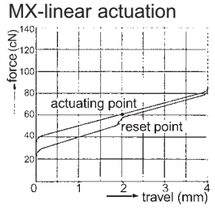
Locking Unit

Ordering-Number:
604-0324

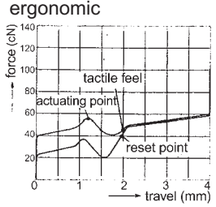


Force/Travel Diagram

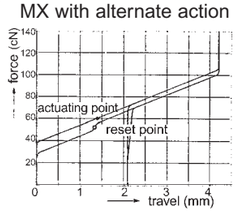
MX-linear actuation



MX with click tactile feel ergonomic



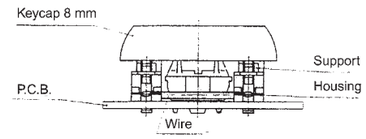
MX with alternate action

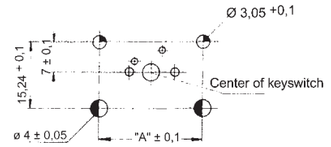


The special advantage of the MX key is the individual choice of pleasant feel.

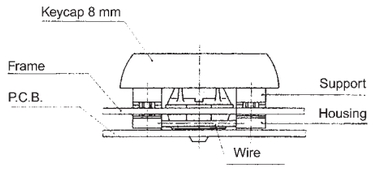
Spacebar Mechanism

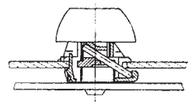
W/o frame



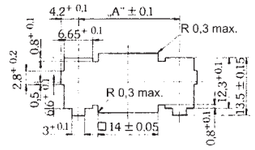


with frame

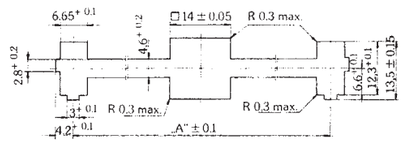




Cutout of frame for keycap sizes
1x2, 1x2,25, 1x2,75



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



Size of keycap	1x2 1x2,25 1x2,75	1x3	1x8
Type of keycap	8 mm	8 mm	8 mm
„A“ (in mm)	23,8	38,1	133,35
Part No. with frame	G99-0224	G99-0225	G99-0226
Part No. w/o frame	G99-0742	G99-0743	G99-0744

Ordering code:

①	②	③	④		⑤	⑥	⑦
MX	1	A	-	1	1	N	N

① Series	Typ MX
② Contact material	1 = AuAg10 (max.10mA,12V)
③ Contact mounting	A = 1 contact making element
④ Actuation	1 = Linear feel
	G = Soft tactile feel
	3 = Click tactile
⑤ Cap support	1 = Standard, straight for 8 mm cap
⑥ Mounting	N = Without LED, without diode
	R = Red LED, without diode
	G = Green LED, without diode
	Y = Yellow LED, without diode
	D = With diode, without LED
	J = With Jumper without LED or Diode
⑦ Fixing pins	N = Without pins (frame required)
	W = With Pins (no frame required)