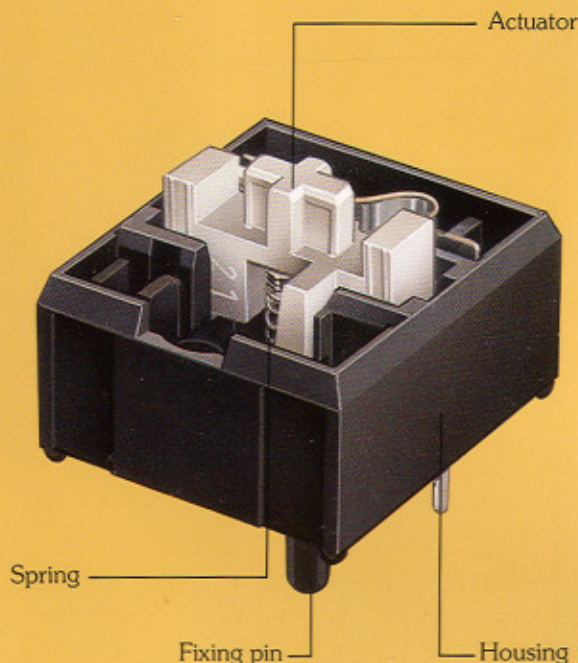


Keymodule M8

**Two basic Versions
and a Host of Keycap Styles
for Keyboard Design.**





Main Advantages

- "Gold Crosspoint" contacts.
- High life expectation: $> 10 \times 10^6$ operations.
- Precise switching for high functional reliability.
- Fatigue-free operation with no risk of multiple actuation.
- Your choice of linear feel or tactile feedback at actuation.
- Low profile, 2.5 mm full-travel keyswitches.
- Keymodule body covered or uncovered.
- Optionally available with LEDs.
- 6-mm or 12-mm standard keycaps, as well as a large range of special versions.
- Cost-effective keyboard assembly: keymodules are mounted directly onto the P.C. board.
- All plastics used are UL-registered.
- Fast delivery and flexible disposition.
- Special-purpose versions are possible.

Important Features

- 2.5 mm full-travel keyswitches.
- 19.05 mm standard spacing, 16 mm on request.
- Different ways of operation: Linear, Tactile feedback, German Postal tactile feedback.
- Contact versions: Single pole, Double pole, Double pole with defined switching characteristic.
- Extremely low profile.
- Low initial contact resistance of 200 m Ω max. (typically 25 m Ω).
- Variety of contact materials for different electrical requirements.
- Direct mounting to P.C. board using fixing pins.
- Option of angled stems for "stepped" keyboard design.
- Optional LEDs for status indications.

Typical Applications

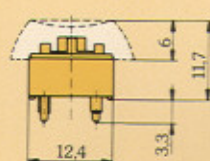
- Office machines
- Telephone keysets
- Portable computers
- Measurement and control equipment
- Medical equipment
- Musical instruments

Technical Specifications

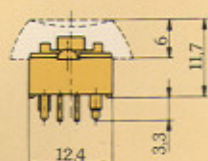
	M81	M82	M84
Materials: Plastic parts		Thermoplastics, UL-registered	
Contacts	AuAg26Ni3	AgPd30	AuAg10
Springs		Stainless steel	
Storage temperature range		-40° C to +70° C	
Operating temperature range		-10° C to +70° C	
Relative humidity		5% to 95%, noncondensing	
Solderability	Suitable for solder bath method in acc. with DIN IEC 68 Teil 2-20		

Dimensions

Uncovered keymodule

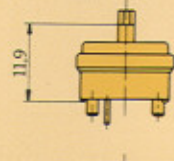


Dimensions in mm

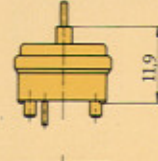


LED version

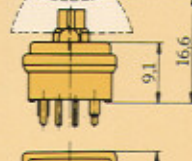
Covered keymodule



6 mm keycap



12 mm keycap



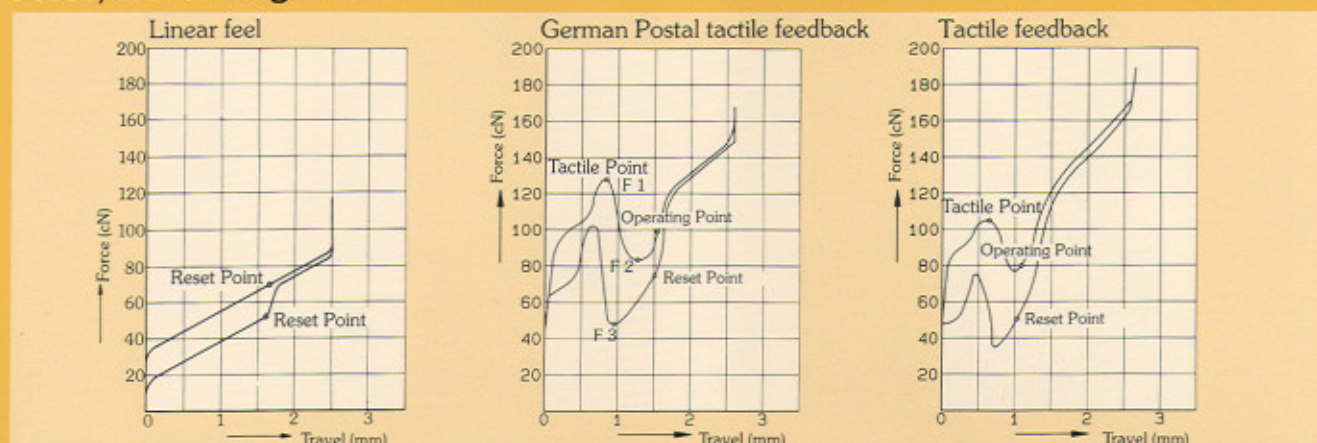
LED version
6 mm keycap

	Keyswitch with linear feel	Keyswitch with tactile feedback in compliance with German Postal Service specifications	Keyswitch with tactile feedback
Total travel	2.5 +0.2 mm -0.3 mm	2.5 +0.2 mm -0.3 mm	2.5 +0.2 mm -0.3 mm
Pretravel	1.6 ± 0.6 mm	1.4 ± 0.6 mm	1.3 ± 0.6 mm
Operating force	70 ± 20 cN	95 ± 30 cN	100 ± 40 cN
Force required to overcome pressure point	-	max. 140 cN	105 ± 30 cN

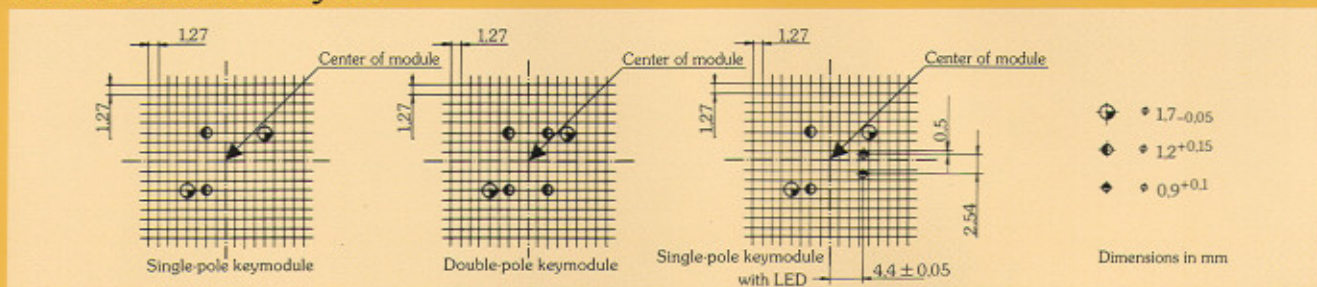
Electrical Specifications

	M81	M82	M84
Voltage min./max.	28 V AC/DC	60 V AC/DC	12 V AC/DC max.
Current min./max.	100 mA max.	100 mA max.	10 mA max.
Dielectric strength	500 V/50 Hz/1 min.		
Life expectancy w/o electrical load	≧	10 x 10 ⁶ operations	
Life expectancy at load of 1.5 V, 1 mA	≧	10 x 10 ⁶ operations	
Initial contact resistance	≧ 200 m Ω max. (25 m Ω typ.)		
Insulation resistance at 100 V	When new and after rated life expectancy: 100 M Ω		
Capacitance at 1 kHz	< 1 pF		
Bounce time at operating speed of 0.4 m/sec.	≤ 5 ms		

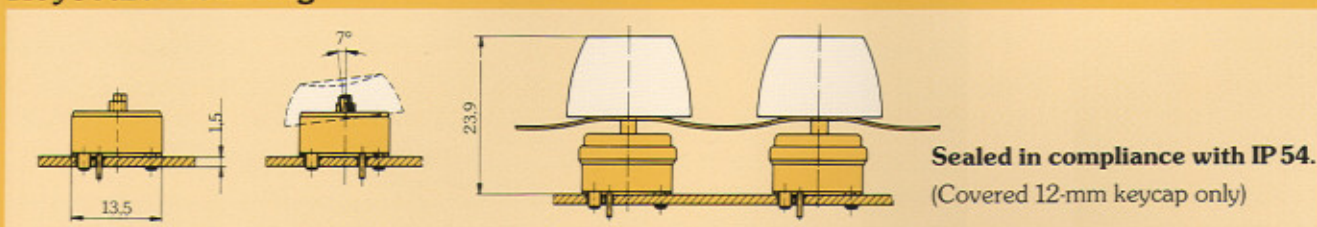
Force/Travel Diagram



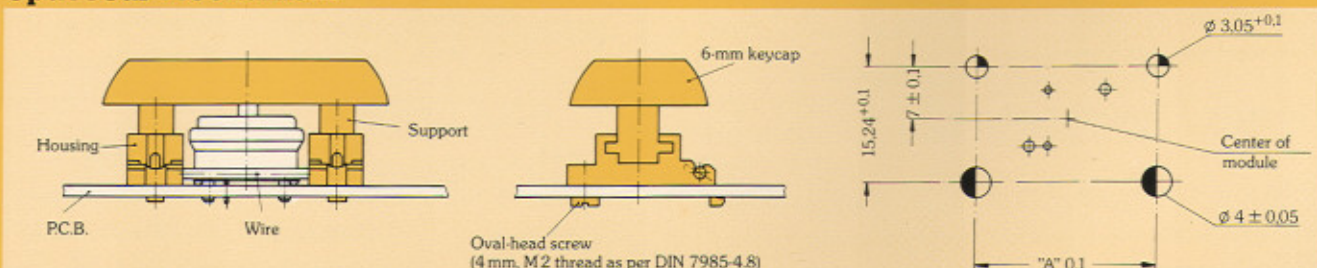
P.C.B. Bore Hole Layout



Keyboard Mounting



Spacebar Mechanism



Keycap format	1x2	1x2	1x3	1x3	1x8	1x8
Keycap height	6mm	6mm	6mm	6mm	6mm	6mm
Keymodule type	uncovered	covered	uncovered	covered	uncovered	covered
"A" (mm)	23.8	23.8	38.1	38.1	114.3	114.3
Part no.	G 99-0186	G 99-0189	G 99-0187	G 99-0190	G 99-0188	G 99-0191

Keycaps

Type 1, 12 mm					
Type 2, 6 mm					
Type 3, 15.2 x 15.2 mm					
Type 4, 8 x 13 mm					
Type 5, for insertable legend					

Ordering Information

M81A-0100

Keymodule

Super Low-profile Series

~ Rating

Contact

~ Material

1	△	100mA/28V AuAg 26/70/3
2	△	100mA/60V AuPd 30
4	○	20mA max./12V max. AuAg 30

		Normally open	No. of contacts	Normally closed	Ground	Membrane contact switch	tactile feedback	For spacebar	Operating force/ pressure point force mN
A	1	X	3	X		X			70 ± 20 105 ± 30
B*	1	X	3	X		X			85 ± 20
C	2	X	3	X		X			95 ± 35 90 ± 35
D*	1	1	3	X		X			85 ± 35
E	1		X	X					70 ± 20 105 ± 30
F	2		X	X		X			95 ± 35 90 ± 35
G	1		X	X	X	X			95 ± 35
H	1		X	X	X	X			95 ± 35
I	2		X	X	X	X			

Uncovered

Covered

Switching
Characteristic

0	Linear feel
1	Tactile feedback
4	Tactile feedback in compl. w. 50 German Plastic Tens. spec.

Stem
Type

1		Standard short keycap types: 2.5
3		Standard short keycap types: 2.5
5		Covered short keycap types: 2.3, 4, 5
6		Covered long keycap type: 3
7		Short, angled 7° keycap type: 3

LED

O	Without LED
R	Red LED
G	Green LED
Y	Yellow LED
S	Red LED super bright

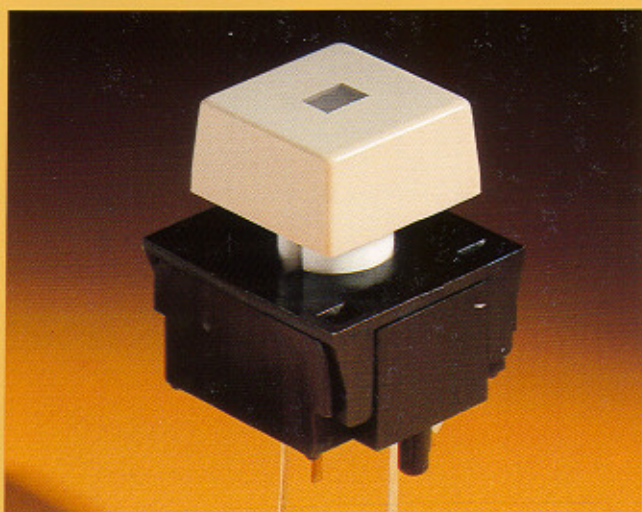
Keycap
1x1, blank

O	n/a keycap
R	Red
G	Green
Y	Yellow
B	Blue
U	Grey
W	White
S	Black

Keymodule M85

Main Advantages

- "Gold Crosspoint" contacts, a configuration that has proven itself in practice millions of times over.
- Fatigue-free operation with no risk of multiple actuation.
- Cost-effective keyboard assembly: keymodules are mounted directly onto the PC. board.
- Fast delivery and flexible disposition.
- Available through our worldwide network of agents and distributors
- The Cherry M 85.
A new generation keymodule



Important Features

- 2.5 mm full-travel keyswitches.
- Low profile.
- Integrated LED with enhanced brightness.
- Direct mounting to PC. board using fixing pins.

Typical Applications

- Measurement and control equipment
- Medical equipment
- Automatic teller machines
- Musical instruments

Technical Specifications

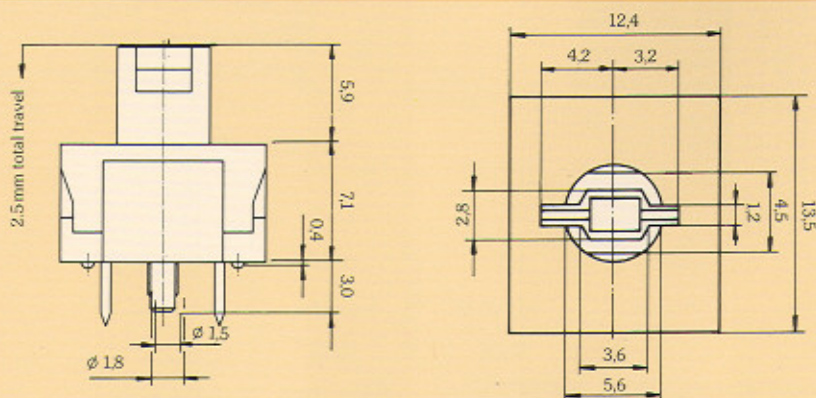
Materials:

- | | | |
|-----------------|-------|-------------------------------|
| - Plastic parts | _____ | Thermoplastics, UL-registered |
| - Contacts | _____ | High-quality gold alloy |
| - Springs | _____ | Stainless steel |

Storage temperature range _____ - 20° C to + 80° C

Operating temperatur range _____ - 10° C to + 70° C

Dimensions



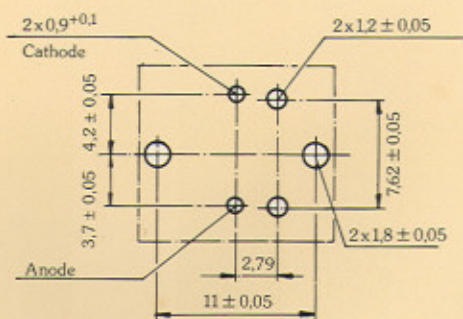
Mechanical Specifications

- Total travel 2.5 ± 0.2 mm
- Petravel 1.5 ± 0.5 mm
- Operating force 80 ± 20 cN

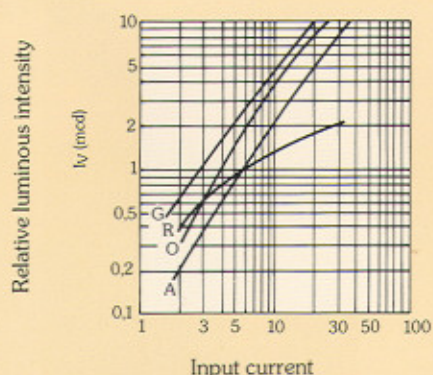
Electrical Specifications

- | | |
|---------------------------------------|-----------------------------|
| ● Voltage | 12 V DC max. |
| ● Current | 10 mA max. |
| ● Life expectancy w/o electrical load | 10×10^6 operations |
| ● Life expectancy at load of 5 V, 1mA | > 500,000 operations |
| ● Initial contact resistance | 200 m Ω max. |
| ● Bounce time | 5ms max. |

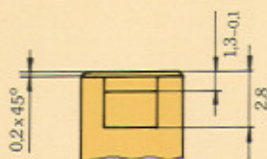
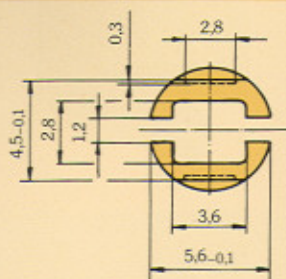
P.C.B. Bore Hole Layout



LED Brightness



Keyswitch Stem



Ordering Information

M 8 5 A - O N R U

LED	
O	w/o LED
R	Red
G	Green
A	Yellow
Y	Orange

Keycaps	
O	w/o keycap
U	Grey (standard)
N	w/o LED