







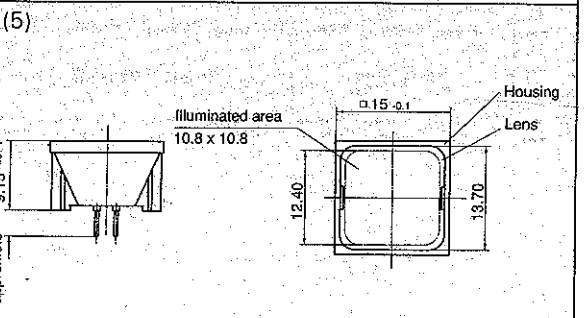
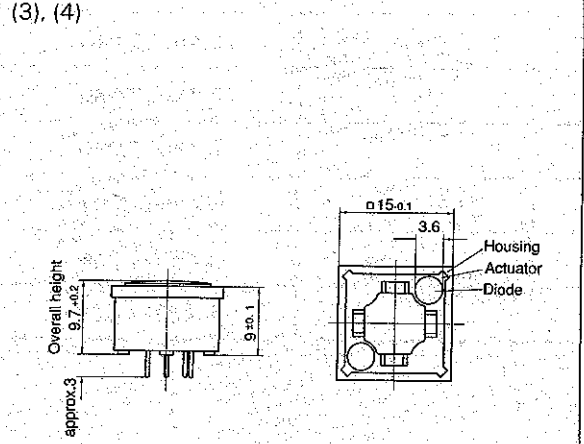
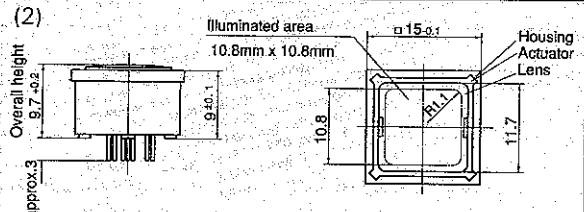
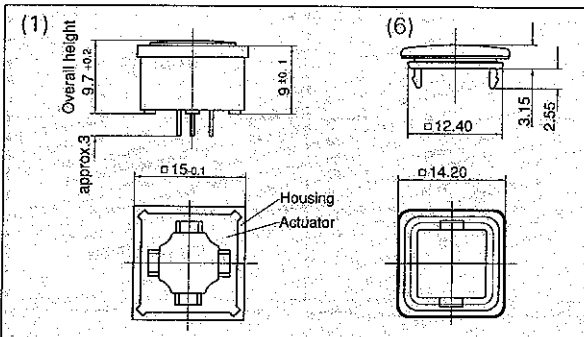


Keypad RF 15, non-illuminated Overall height 9.7 mm	Contact	Keypad colour	Order no.	Accessories: (6) Snap-on keypad	Order no. 5.46654.059 /0227
(1)* 	Au	opaque white	3.14100.001		
	Ag		3.14100.006		
				beige, (other colours on request), can be legended by printing, engraving or laser	

Keypad RF 15, illuminated	Illumination	Contact	Keypad colour	LED-colour	Order no.	
					Standard-LED	Low-current LED
(2)*  Improved illumination	Fully illuminated 2 LEDs	Au	red	red	3.14200.011	-
			green	green	3.14200.012	-
			yellow	yellow	3.14200.013	-
			orange	yellow	3.14200.014	-
		Ag	red	red	3.14200.021	-
			green	green	3.14200.022	-
			yellow	yellow	3.14200.023	-
			orange	yellow	3.14200.024	-
(3) 	Spot-illuminated 1 LED	Au	opaque white	blue	3.14100.030	-
				red	3.14100.031	3.14100.431
				green	3.14100.032	-
				yellow	3.14100.033	-
		Ag	opaque white	blue	3.14100.040	-
				red	3.14100.041	3.14100.441
				green	3.14100.042	-
				yellow	3.14100.043	-
(4) 	Spot-illuminated 2 LEDs	Au	opaque white	blue	3.14100.080	-
				red	3.14100.081	3.14100.481
				green	3.14100.082	-
				yellow	3.14100.083	-
		Ag	opaque white	blue	3.14100.090	-
				red	3.14100.091	3.14100.491
				green	3.14100.092	-
				yellow	3.14100.093	-

Signal indicator RF 15, Overall height 9.7 mm	Illumination	Contact	Lens colour	LED-colour	Order no.	
					Standard-LED	Low-current LED
(5)  Improved illumination	Fully illuminated 1 LED	-	red	red	3.14200.051	-
		-	green	green	3.14200.052	-
		-	yellow	yellow	3.14200.053	-
		-	orange	yellow	3.14200.054	-

* Suitable for RK 90 system



Hints for application:

If an overall height of 12.5 mm is required or if it is necessary to be able to change the legending, keycaps can be snapped onto non-illuminated keyswitches (1). The legending of the keycaps is visible through a window in the overlay. If different legending is required, you simply replace the keycap.

Low-profile keyboards with RF 15 elements are normally constructed with 19.05 mm grid spacing. With this grid, metal webs remain on the front panel between the individual key-switches, onto which the overlay can be glued. In this case, we recommend area embossing for the overlay above the key-switches.

To reduce current consumption, for the spot-illuminated key-switches red low-current LEDs are available.

Mechanical construction

- Contact system and arrangement: Snap-action contact, 1 normally-open contact
- Illumination: 1 or 2 LEDs (spot or surface illumination)
- Fixing: By soldering into the PCB
- Flammability of plastic materials: UL 94 HB
- Contact material: Au or Ag, as required
- Terminals: Contact spring: tin-plated
Stationary contact: Au-version tin-plated, or Ag-version silver-plated

Mechanical characteristics

- Operating force: 2 – 3 N max.
- Full travel: 0.5 + 0.2 mm
- Switching travel: 0.5 + 0.2 mm
- Robustness: ≥ 100 N (with through-plated PCB)

Electrical characteristics

- Rated voltage: 0.02 ... 42 V AC/DC (Au) for TTL level, 3 ... 50 V (Ag)
- Rated current: 0.01 ... 100 mA AC/DC (Au) for TTL level, 0.1 ... 250 mA (Ag)
- Rated power: 2 W AC/DC (Au), 12.5 W AC/DC (Ag) Ohmic load respectively
- Contact resistance: ≤ 100 m Ω when new
 ≤ 3 Ω after operating life
- Insulation resistance: $> 10^9$ Ω
- ESD-strength: 15 kV if the keyswitches are covered by an overlay
- Bouncing time: ≤ 5 ms

Further details

- Ambient temp., operating: - 25 °C ... + 70 °C
- Ambient temp., storage: - 40 °C ... + 80 °C
- 40 °C ... + 50 °C in standard packing

Environment conditions:

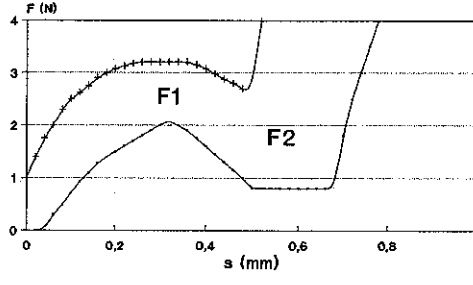
- Constant environment: acc. to IEC 68-2-3 and 2-30
- Variable environment: acc. to IEC 68-2-14 and 2-33

- Operating life: $\geq 10^6$ operations
- Soldering temp.: 250 °C
- Soldering time: 2.5 sec. max.

Hole patterns, dimensional drawings, circuit diagram and data of the LEDs/signal indicators, see page 5 – 26 ff.

Force/Travel Diagram - Keyswitch

Operation characteristic limits RF



F 1 = Max. operating force
 F 2 = Force at contact
 F 2 is max. 55% of F 1

Circuit Diagram - Keyswitches

Keyswitch, non-illuminated	Keyswitch, fully illuminated	Keyswitch, spot-illuminated 1/2 LED	Keyswitch, fully and spot-illuminated