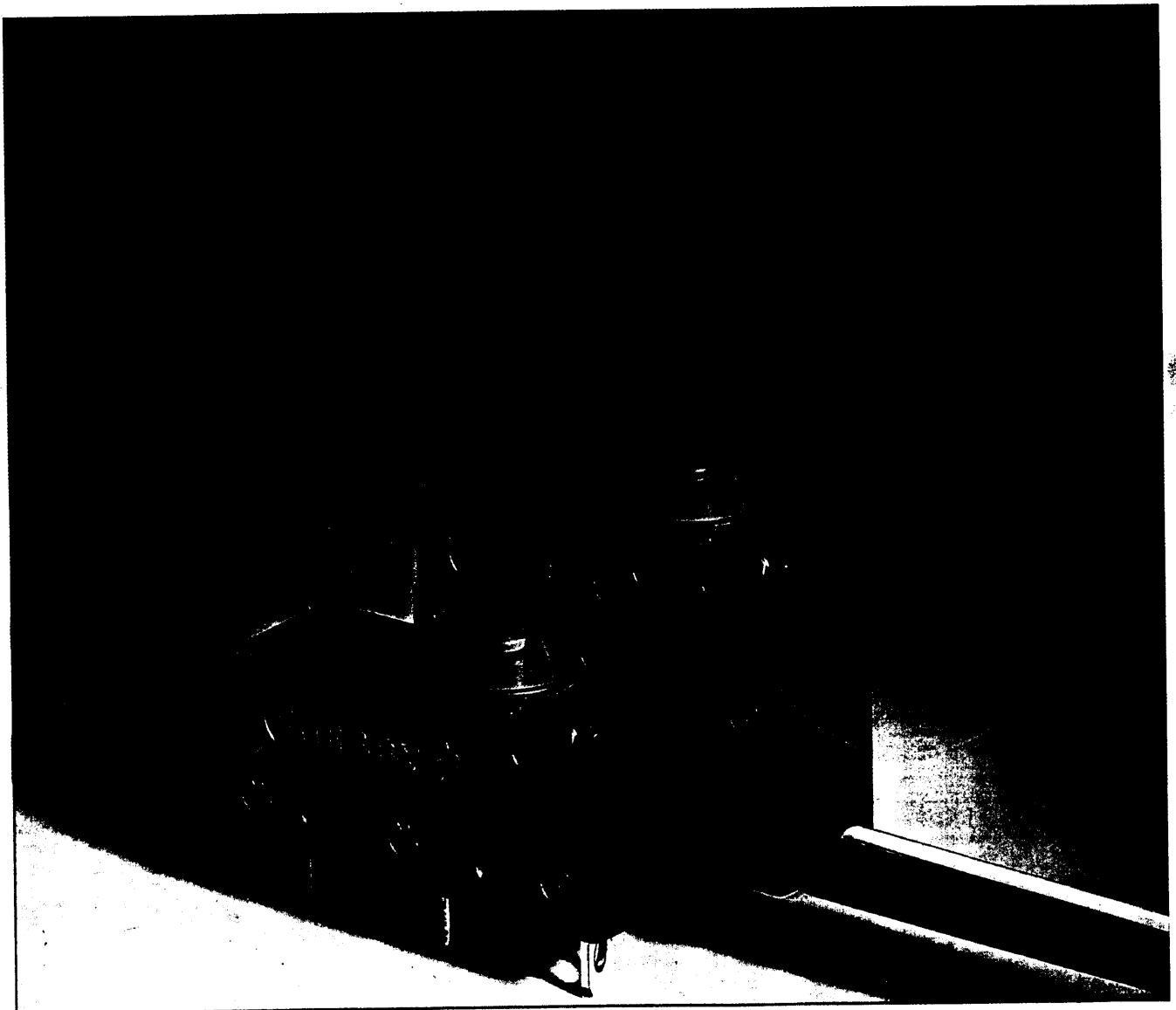
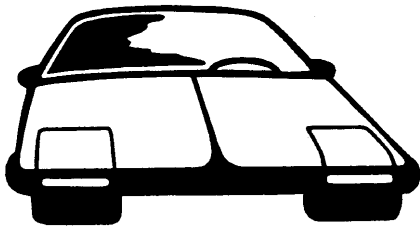


# Snap Switch DC.

**New:**

»Special Applications  
Automotive Switches«

**The Cherry »Nautilus«.  
Waterproof Subminiature  
Switch. Degree of  
Protection IP 67.**



## Important Features

- Solder or leads terminals.
- Various auxiliary actuators.
- For operating forces of 200 cN and 340 cN.
- Various contact versions.
- Switch loads of max. 100 mA, 3 A, 6 A and 10 (1,5) A.
- Two housing sizes.

## Technical Data

- **Materials**
  - Case: thermoplastic polyester, UL 94 VO.
  - Cover: thermoplastic polyester, UL 94 VO.
  - Actuator: thermoplastic polyester, UL 94 VO. polyacetal, UL 94 HB.
  - Spring: stainless steel.
  - Terminals: CuZn silver plated.
  - Gasket: silicon.
  - Contacts: silver-nickel or »Gold Crosspoint« contacts.
  - Blade: cooper beryllium.
  - Auxiliary actuator: stainless steel or plastic.
  - Leads: PVC insulated.
- **Protection**
  - Terminals: IP 00 (DIN 40050).
  - Switch button actuator: IP 67 (DIN 40050). Further specific requirements will be considered upon request.
  - Sealed leads version: IP 67 (DIN 40050). Further specific requirements will be considered upon request.
- **Operating temperature:**
  - Actuator out of Polyester: -40°C (-40°F) to +85°C (+185°F)
  - Lead version: -40°C (-40°F) to +105°C (+221°F).
- **Tracking resistance: KC175**
- **Approvals for series DC1, DC2 and DC3.**
  - Solder version: VDE-UG, UL, CSA, BEAB and other standards.
  - Lead version: Standard version without approvals. VDE, UL upon request.

## Electrical Specifications/Electrical Life

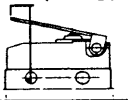
| Series | Ratings           |   | Operating force max. | Mechanical Life            |                         | Electrical Life            |                         |
|--------|-------------------|---|----------------------|----------------------------|-------------------------|----------------------------|-------------------------|
|        | VDE               | UL  |                      | without Auxiliary Actuator | with Auxiliary Actuator | without Auxiliary Actuator | with Auxiliary Actuator |
| DC 1   | 6 A, 250V~        | 5 A, 125-250 VAC                              | 200 cN               | 2 × 10 <sup>6</sup>        | upon request            | > 50.000                   | upon request            |
| DC 2   | 10 (1,5) A, 250V~ | 10.1 A, 1/4 HP 125 VAC<br>10.1 A, 125-250 VAC | 340 cN               | 10 <sup>6</sup>            |                         |                            |                         |
| DC 3   | 0,1 A, 250V~      | 0,1 A, 125-250 VAC                            | 200 cN               | 2 × 10 <sup>6</sup>        |                         | per elec. rating           |                         |
| DC 4   | 3 A, 250V~        | 3 A, 125-250 VAC                              | 200 cN               | 2 × 10 <sup>6</sup>        |                         | > 100.000                  |                         |

## Current Operating Life

| Series | Load capacity | Resistive load | Inductive load (L/R = 3 ms) | Series | Load capacity | Resistive load | Inductive load (L/R = 3 ms) |
|--------|---------------|----------------|-----------------------------|--------|---------------|----------------|-----------------------------|
| DC1    | 12V           | 6A             | 6A                          | DC2    | 12V           | 10A            | 10A                         |
|        | 24V           | 3A             | 2A                          |        | 24V           | 5A             | 4A                          |
|        | 60V           | 1A             | 0.5A                        |        | 60V           | 1A             | 0.5A                        |
|        | 110V          | 0.5A           | 0.2A                        |        | 110V          | 0.5A           | 0.2A                        |
|        | 220V          | 0.25A          | 0.1A                        |        | 220V          | 0.25A          | 0.1A                        |

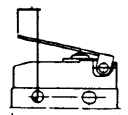
## Mechanical Specifications

| Series                                 | Operating Characteristics    | Without auxiliary actuator | Type of auxiliary actuator |            |            |                  |                  |                  |              |           |  |
|--|------------------------------|----------------------------|----------------------------|------------|------------|------------------|------------------|------------------|--------------|-----------|--|
|  |                              |                            | Straight                   | Straight   | Straight   | Simulated roller | Simulated roller | Simulated roller |              |           |  |
| <b>DC1</b><br><b>DC3</b><br><b>DC4</b> | Operating force max.         | cN                         | 200                        | 80         | 70         |                  | 90               | 80               |              |           |  |
|  | DC1, DC3, DC4 max.           |                            |                            |            |            |                  |                  |                  |              |           |  |
|  | Pretravel max.               | mm                         | 1                          | 4.5        | 5          |                  | 4.5              | 5                |              |           |  |
|  | Reset min.                   | mm                         | 0.6                        | 1.5        | 1.5        |                  | 1.5              | 1.5              |              |           |  |
|  | Differential max.            | mm                         | 0.1                        | 0.5        | 0.6        |                  | 0.5              | 0.6              |              |           |  |
|  | Reset position max.          | mm                         | 9.3                        | 14         | 15         |                  | 19               | 20               |              |           |  |
|  | Operating point              | mm                         | 8.4 ± 0.3                  | 10.7 ± 1.3 | 11.1 ± 1.5 | upon request     | 16 ± 1.3         | 16.4 ± 1.5       | upon request |           |  |
|  | Length of Auxiliary actuator |                            |                            |            |            |                  |                  |                  |              |           |  |
|  | - Length                     | ± 0.8 mm                   | -                          | 4.8        | 7          |                  |                  | 2.5              |              | 4.7       |  |
|  | - Code                       |                            | <b>AA</b>                  | <b>LB</b>  | <b>LC</b>  |                  |                  | <b>SB</b>        |              | <b>SC</b> |  |
| <b>DC2</b>                             | Operating force              | cN                         | 340                        | 150        | 120        |                  |                  | 160              |              | 130       |  |
|  | DC2 max.                     |                            |                            |            |            |                  |                  |                  |              |           |  |
|  | Pretravel max.               | mm                         | 1                          | 5          | 5.5        |                  |                  | 5                |              | 5.5       |  |
|  | Reset min.                   | mm                         | 0.6                        | 1.5        | 1.5        |                  |                  | 1.5              |              | 1.5       |  |
|  | Differential max.            | mm                         | 0.1                        | 0.7        | 1          |                  |                  | 0.7              |              | 1         |  |
|  | Reset position max.          | mm                         | 9.3                        | 14         | 15         |                  |                  | 19               |              | 20        |  |
|  | Operating point              | mm                         | 8.4 ± 0.3                  | 10.7 ± 1.6 | 11.1 ± 1.8 |                  | 16 ± 1.6         | 16.4 ± 1.8       |              |           |  |
|  | Length of Auxiliary actuator |                            |                            |            |            |                  |                  |                  |              |           |  |
|  | - Length                     | ± 0.8 mm                   | -                          | 4.8        | 7          | 42               | 2.5              | 4.7              | 39.7         |           |  |
|  | - Code                       |                            | <b>AA</b>                  | <b>LB</b>  | <b>LC</b>  | <b>LD</b>        | <b>SB</b>        | <b>SC</b>        | <b>SD</b>    |           |  |



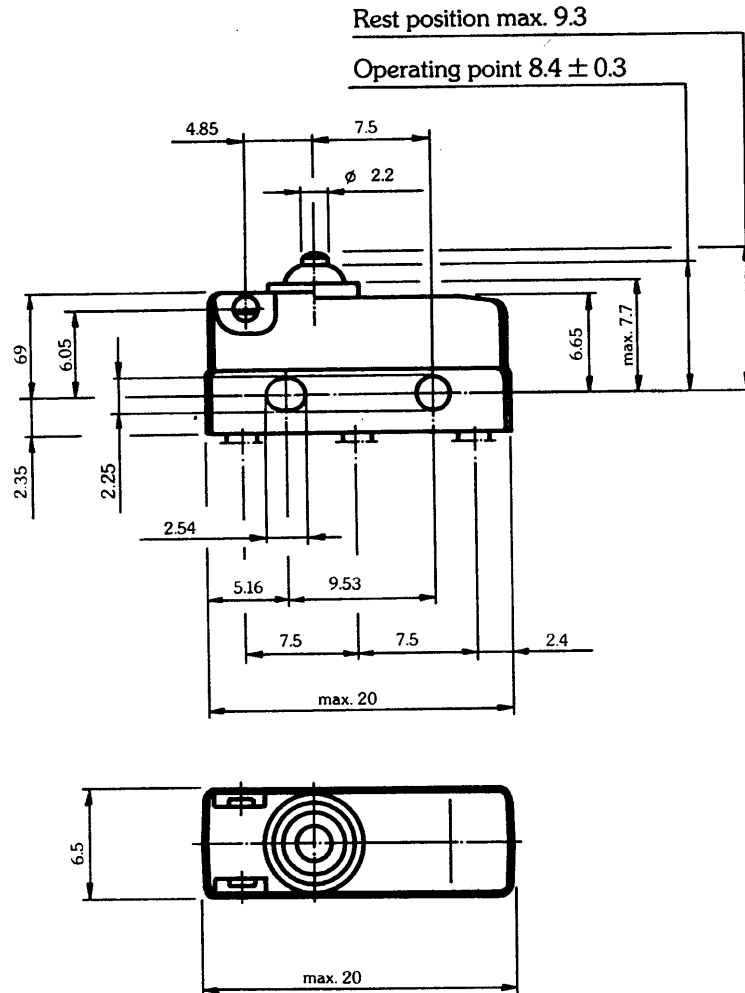
Auxiliary actuator (length) in operating point

| Series                                 | Operating Characteristics    | Type of auxiliary actuator |            |            |                  |                  |                  |                  |           |           |
|--|------------------------------|----------------------------|------------|------------|------------------|------------------|------------------|------------------|-----------|-----------|
|  |                              | Straight                   | Straight   | Straight   | Simulated roller | Simulated roller | Simulated roller | Simulated roller |           |           |
| <b>DC1</b><br><b>DC3</b><br><b>DC4</b> | Operating force max.         | cN                         | 90         | 80         |                  | 68               | 50               | 73               | 73        |           |
|  | DC1, DC3, DC4 max.           |                            |            |            |                  |                  |                  |                  |           |           |
|  | Pretravel max.               | mm                         | 4.5        | 5          |                  | 4.5              | 6                | 4.5              | 4.5       |           |
|  | Reset min.                   | mm                         | 1.5        | 1.5        |                  | 2                | 3                | 2                | 1.5       |           |
|  | Differential max.            | mm                         | 0.5        | 0.6        |                  | 0.6              | 0.8              | 0.6              | 0.6       |           |
|  | Reset position max.          | mm                         | 19         | 20         |                  | 15               | 17               | 15               | 19        |           |
|  | Operating point              | mm                         | 15.8 ± 1.3 | 16.2 ± 1.5 | upon request     | 11.1 ± 1.5       | 12.2 ± 1.8       | 11.9 ± 1.4       | 16 ± 1.4  |           |
|  | Length of Auxiliary actuator |                            |            |            |                  |                  |                  |                  |           |           |
|  | - Length                     | ± 0.8 mm                   | 2.5        | 4.7        |                  |                  | 7                | 14               | 5.6       | 5.2       |
|  | - Code                       |                            | <b>RB</b>  | <b>RC</b>  |                  |                  | <b>WB</b>        | <b>WC</b>        | <b>VB</b> | <b>ZB</b> |
| <b>DC2</b>                             | Operating force              | cN                         | 160        | 130        |                  |                  | 115              | 35               | 125       | 125       |
|  | DC2 max.                     |                            |            |            |                  |                  |                  |                  |           |           |
|  | Pretravel max.               | mm                         | 5          | 5.5        |                  |                  | 4.5              | 6                | 4.5       | 4.5       |
|  | Reset min.                   | mm                         | 1.5        | 1.5        |                  |                  | 2                | 3                | 2         | 1.5       |
|  | Differential max.            | mm                         | 0.7        | 1          |                  |                  | 0.6              | 0.8              | 0.6       | 0.6       |
|  | Reset position max.          | mm                         | 19         | 20         |                  |                  | 15               | 17               | 15        | 19        |
|  | Operating point              | mm                         | 15.8 ± 1.6 | 16.2 ± 1.8 |                  | 11.1 ± 1.5       | 12.2 ± 1.8       | 11.9 ± 1.4       | 16 ± 1.4  |           |
|  | Length of Auxiliary actuator |                            |            |            |                  |                  |                  |                  |           |           |
|  | - Length                     | ± 0.8 mm                   | 2.5        | 4.7        | 39.7             | 7                | 14               | 5.6              | 5.2       |           |
|  | - Code                       |                            | <b>RB</b>  | <b>RC</b>  | <b>RD</b>        | <b>WB</b>        | <b>WC</b>        | <b>VB</b>        | <b>ZB</b> |           |



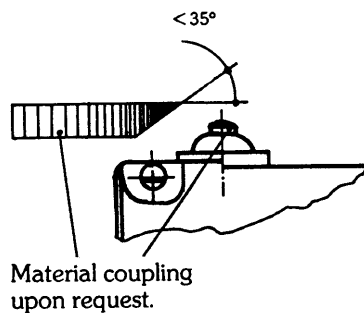
Auxiliary actuator (length) in operating point

## Dimensions – solder and QC terminals

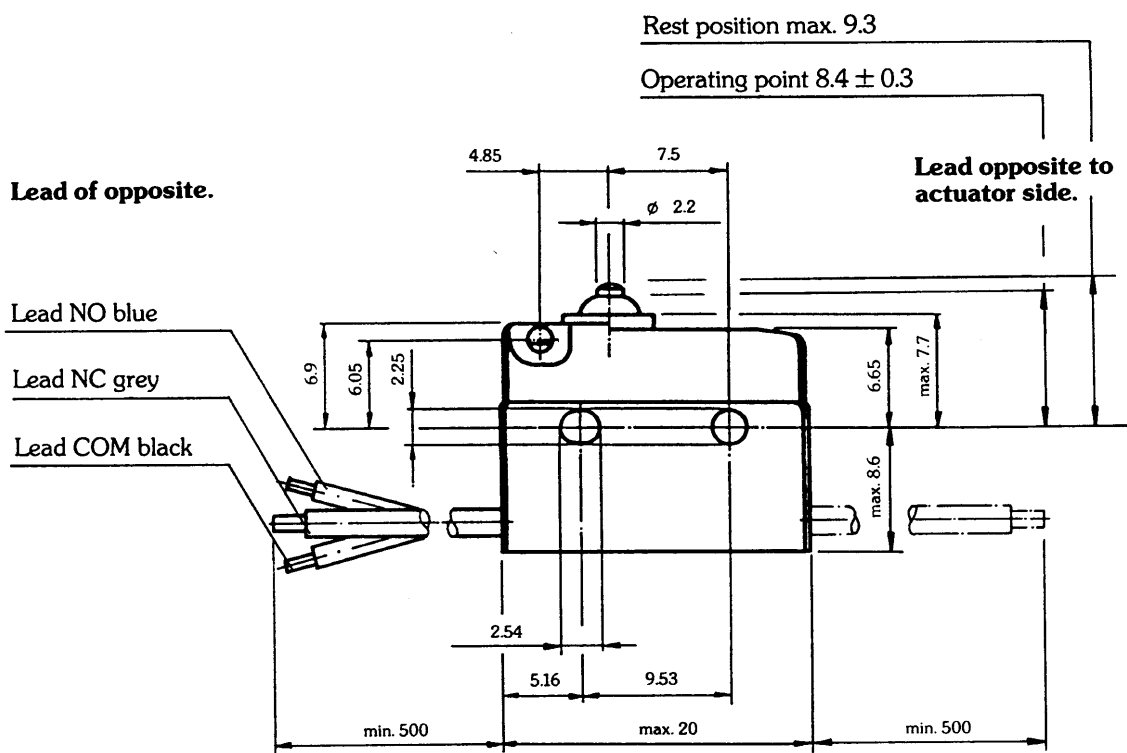


## Suggested Applications

Operating from any direction possible.



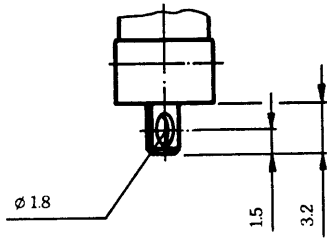
## Dimensions – (Lead Version)



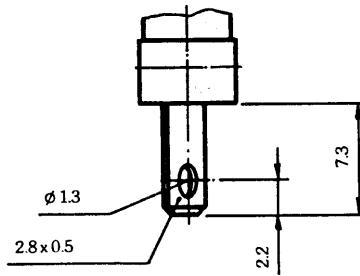
Lead stripped,  
 stranded and tinned.

## Terminations

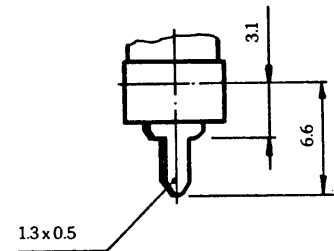
Solder, short  
(twisted 30° C)



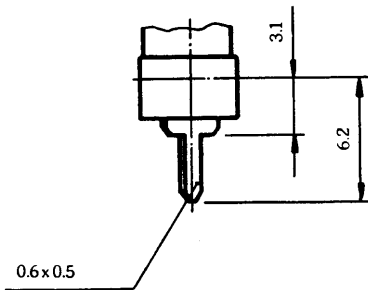
Q.C. 2.8x0.5



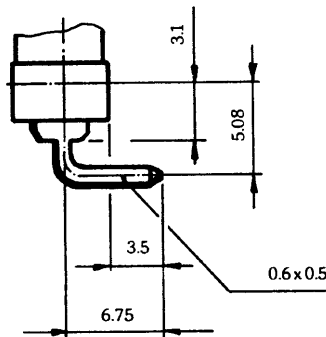
PCB 1.3x0.5



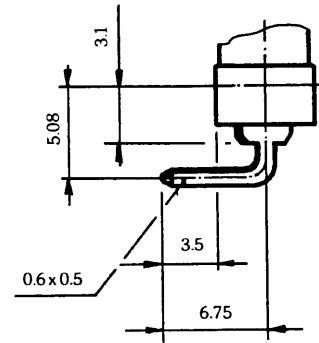
PCB 0.6x0.5



PCB right side  
0.6x0.5

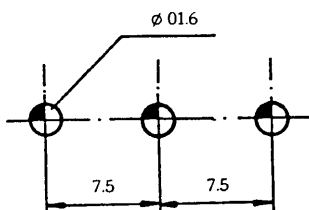


PCB left side  
0.6x0.5

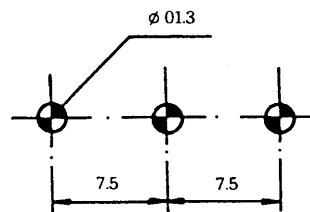


## PCB Terminal Location

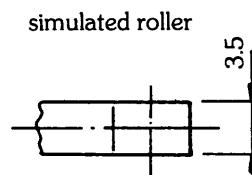
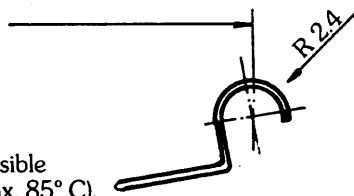
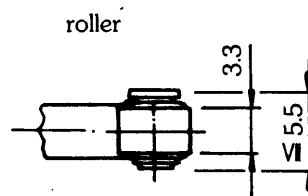
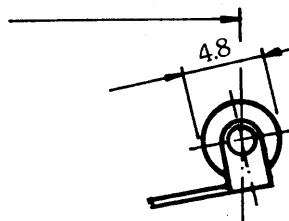
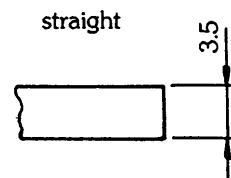
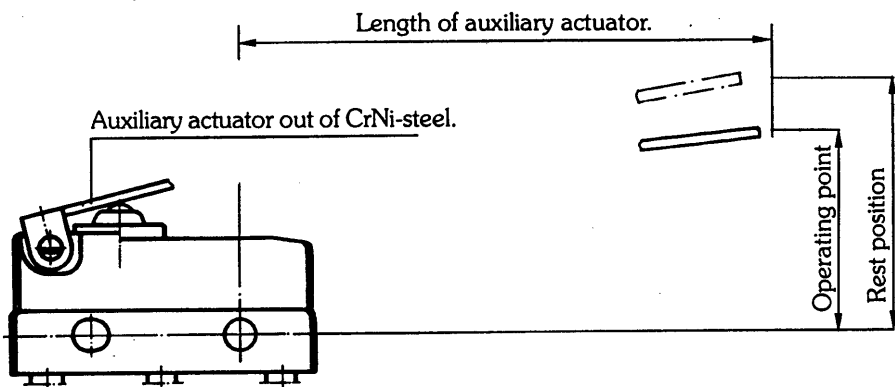
PCB side mounted  
1.3x0.5



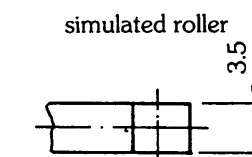
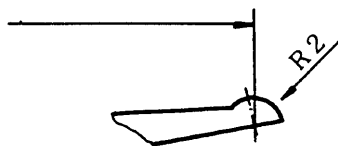
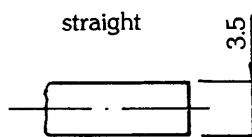
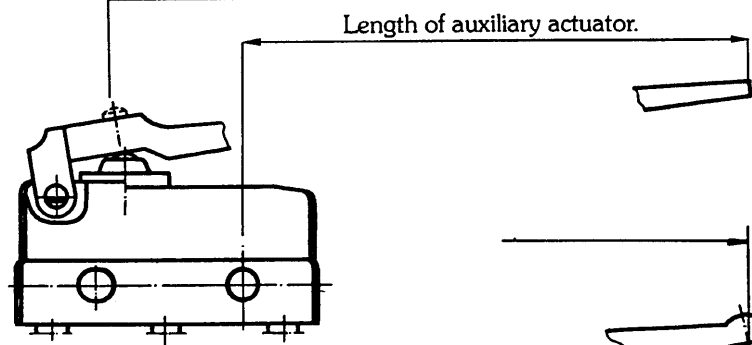
PCB side mounted  
or upright  
0.6x0.5



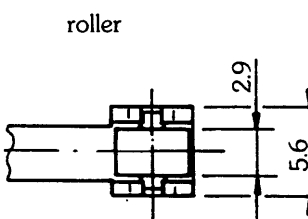
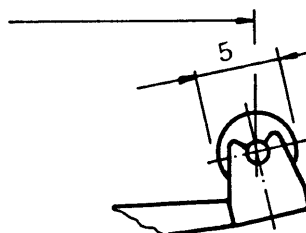
# Auxiliary Actuator



For plastic auxiliary actuators on operating point adjustment is possible by means of an adjustable screw (max. 85° C).



Ordering code for switches with adjustable screw available upon request.



Ice-free lever/customs versions available upon request.

## How to Order

DC 3 C - B 3 RD

Switch type

Rating/operating force

Contact arrangement/Operating temperature

Terminals

Terminal arrangement

Auxiliary actuator length

### Example:

**DC:** Subminiature switch waterproof  
**3:** 0.1A, 250V  
**C:** T105/SPDT  
**B:** Lead 0.5mm  
**3:** Lead opposite to actuator side  
**R:** Auxiliary actuator with roller  
**D:** Auxiliary actuator length of 39.7mm from centre to switch fixing hole (operating force 25cN max.)






## Options

| Rating/Operating force |            | Code |
|------------------------|------------|------|
| 250V~, 6A              | max. 200cN | 1    |
| 250V~, 10 (1.5) A      | max. 340cN | 2    |
| 250V~, 0.1A            | max. 200cN | 3    |
| 250V~, 3A              | max. 200cN | 4    |

| Contact arrangement | Operating temperature |           | Code |
|---------------------|-----------------------|-----------|------|
|                     | w/o lead              | with lead |      |
| S.P.S.T. - NO       | 120° C                | 105° C    | A    |
| S.P.S.T. - NC       | 120° C                | 105° C    | B    |
| S.P.D.T.            | 120° C                | 105° C    | C    |
| S.P.S.T. - NO       | 85° C                 | 85° C     | E    |
| S.P.S.T. - NC       | 85° C                 | 85° C     | F    |
| S.P.D.T.            | 85° C                 | 85° C     | G    |

| Terminals   | Code |
|---|------|
| Solder terminal<br>Lead 0.5mm (105° C, up to a switch load of 3A max., approvals pending) | A    |
| Lead 0.75mm (105° C, approvals pending)   | B    |
| PCB-terminal 1.3x0.5  | C    |
| PCB-terminal 0.6x0.5mm, up to switch load of 6A   | H    |
| Quick connect terminals 2.8x0.5 approved only up to max. 6A by European agencies.         | K    |
|   | L    |

| Terminal arrangement   | Code |
|--|------|
|  30° twisted                        | 1    |
|  Lead. Actuator side                | 3    |
|  Lead opposite to the actuator side | 4    |
|  PCB right                          | 6    |
|  PCB left                           | 7    |

| Auxiliary actuator         | Auxiliary length | Code |
|----------------------------|------------------|------|
| Without Auxiliary actuator | -                | AA   |
| Straight                   | 4.8mm            | LB   |
|                            | 7mm              | LC   |
|                            | 42mm             | LD   |
| Straight with roller       | 2.5mm            | RB   |
|                            | 4.7mm            | RC   |
|                            | 39.7mm           | RD   |
| Straight with sim. roller  | 2.5mm            | SB   |
|                            | 4.7mm            | SC   |
|                            | 39.7mm           | SD   |
| Straight (plastic)         | 7mm              | WB   |
|                            | 14mm             | WC   |
| Roller (plastic)           | 5.2mm            | ZB   |
| Sim. roller (plastic)      | 5.6mm            | VB   |