

multimec®

basic switch modules

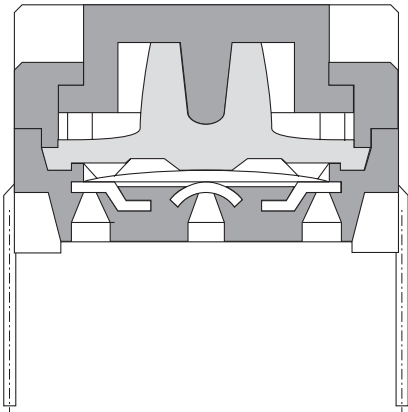
| Through-hole Versions                                                                                                                           |                  |                      |                          |                                                            |                                        |                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------|--------------------------|------------------------------------------------------------|----------------------------------------|-------------------------------------------|
| 3A                                                                                                                                              |                  | 3C                   | 3E                       | 3F                                                         |                                        |                                           |
| For 1A/1B/1M/1ZA/1ZB                                                                                                                            | w/LED for 1C/1H  |                      | For 3E actuators/Varimec | For 1D/1K/1N/1P/1S/1T/1U/1V/1WA/1WD/1WG/1WP/1X/1ZC/1GA/1GC | w/LED for 1D/1E/1F/1N/1Q/1R/1S/1X      | w/LED for 1K/1KB/1KC/1T/1U/1V/1WA/1WD/1WP |
|                                                                                                                                                 |                  |                      |                          |                                                            |                                        |                                           |
| Standard Versions                                                                                                                               |                  |                      |                          |                                                            |                                        |                                           |
| 3ATL6<br>3ATH9                                                                                                                                  | 3ATL600/20/40/80 | 3CTL6/3CTL9<br>3CTH9 | 3ETLXX-H*<br>3ETHXX-H*   | 3FTL6<br>3FTH9                                             | 3FTL600/20/40/60/80/<br>2040/8020/8040 | 3FTL623/45/88                             |
| * 3E available in 6 standard heights: 08.0, 09.5, 10.4, 11.0, 12.0, 15.0 mm. Other heights between 08.0 and 15.0 mm are available upon request. |                  |                      |                          |                                                            |                                        |                                           |
| Specials: Gold contacts, quiet version and actuation force other than 3.0N                                                                      |                  |                      |                          |                                                            |                                        |                                           |

| Surface Mount Versions |              |                          |                                                        | Right Angle Versions |                          |                                                           |                                           |
|------------------------|--------------|--------------------------|--------------------------------------------------------|----------------------|--------------------------|-----------------------------------------------------------|-------------------------------------------|
| 3A                     | 3C           | 3E                       | 3F                                                     | 3C                   | 3E                       | 3F                                                        | 3F w/LED                                  |
| For 1A/1B/1M/1ZA/1ZB   |              | For 3E actuators/Varimec | For 1D/1K/1N/1P/1S/1T/1U/1V/1WA/1WD/1WP/1X/1ZC/1GA/1GC |                      | For 3E actuators/Varimec | For 1D/1K/1N/1P/1S/1T/1U/1V/1W/1WA/1WD/1WP/1X/1ZC/1GA/1GC | For 1D/1E/1F/1N/1Q/1R/1S/1X               |
|                        |              |                          |                                                        |                      |                          |                                                           |                                           |
| Standard Versions      |              |                          |                                                        | Standard Versions    |                          |                                                           |                                           |
| 3ASH9/3ASH9R           | 3CSH9/3CSH9R | 3ESH9/3ESH9R             | 3FSH9/3FSH9R                                           | 3CTL6RAS             | 3ETXX-X.XRAS             | 3FTL6RAS                                                  | 3FTL600/20/40/60/80/<br>2040/8020/8040RAS |

Co-planarity = ≤ 0.05

DIMENSIONS (mm) Unless otherwise specified, all tolerances ± 0.2

multimec® Cross Section



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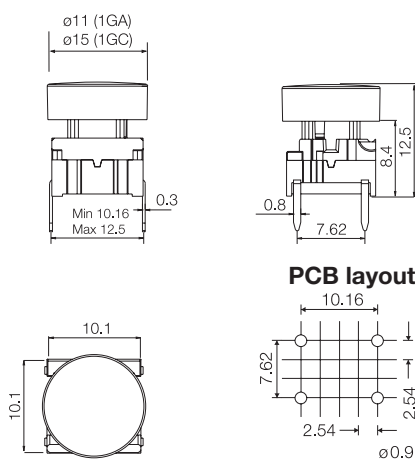
# multimec® 3F + 1GA/1GC

## Technical Data

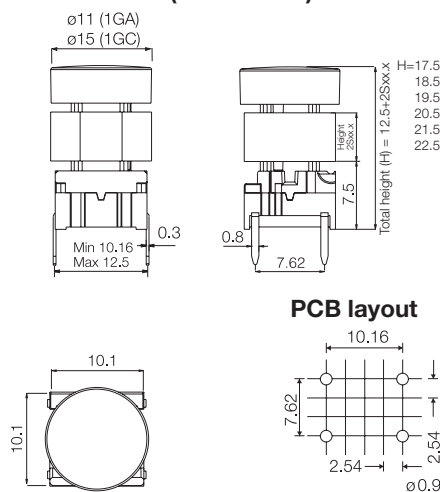
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



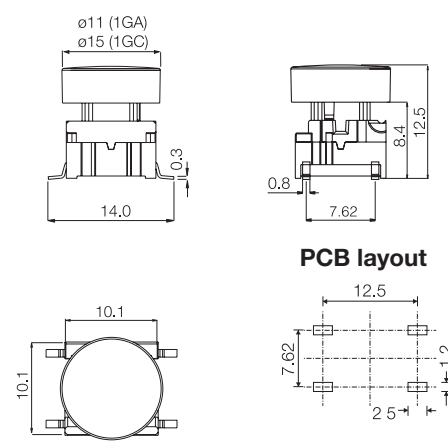
### Dimensions (through-hole)



### Dimensions (w/extender)



### Dimensions (SMD)



## How to order

|               |                          |                          |   |                  |   |                       |               |
|---------------|--------------------------|--------------------------|---|------------------|---|-----------------------|---------------|
| <b>3 F</b>    | <input type="checkbox"/> | <input type="checkbox"/> | + | <b>1 G A 0 9</b> | + | <b>2 S 0 9 - . 0</b>  |               |
| <b>Switch</b> | <b>Mounting</b>          | <b>L 6</b> low temp.     |   | <b>Cap black</b> |   | <b>Extender black</b> | <b>Height</b> |
|               | <b>T</b> through-hole    | <b>H 9</b> high temp.    |   |                  |   |                       | <b>05.0</b>   |
|               | <b>S</b> surface mount   |                          |   | <b>1 G C 0 9</b> |   |                       | <b>06.0</b>   |
|               |                          |                          |   | <b>Cap black</b> |   |                       | <b>07.0</b>   |
|               |                          |                          |   |                  |   | (Optional)            | <b>08.0</b>   |
|               |                          |                          |   |                  |   | Adds 5-10 mm          | <b>09.0</b>   |
|               |                          |                          |   |                  |   | to total height.      | <b>10.0</b>   |

| Keycap  | Variable Extender | H (height) mm | Example |
|---------|-------------------|---------------|---------|
| 1GA/1GC |                   | 12.5          | H 1     |
| 1GA/1GC | 2S09-05.0         | 17.5          | H 2     |
|         | 2S09-06.0         | 18.5          |         |
|         | 2S09-07.0         | 19.5          |         |
|         | 2S09-08.0         | 20.5          |         |
|         | 2S09-09.0         | 21.5          |         |
|         | 2S09-10.0         | 22.5          | H 3     |

H = Overall height

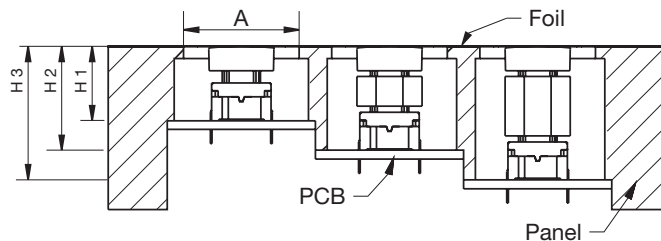
Overall heights below 12.5 mm - Please see Multimec® versions 3C and 3E.

All 2S09 extenders are stackable giving the possibility to match most overall heights.

A = We recommend you to allocate enough space for travel of the foil and leave the area free from adhesive.

Switch travel = 1 mm.

H = We recommend you to calculate this dimension from the top of the PCB to the inner top of the panel.



**Ordering example:** 3FTL6 + 1GA09 or 3FTL6 + 2S09-07.0 + 1GC09

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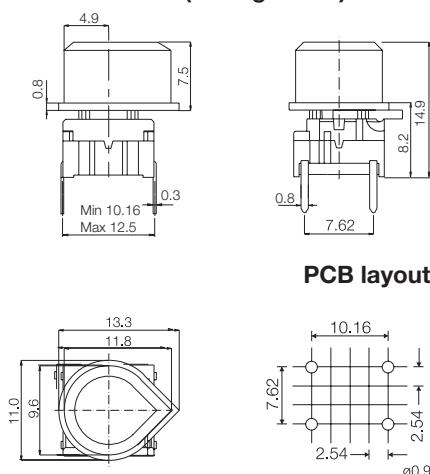
# multimec® 3F + 1N

## Technical Data

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C

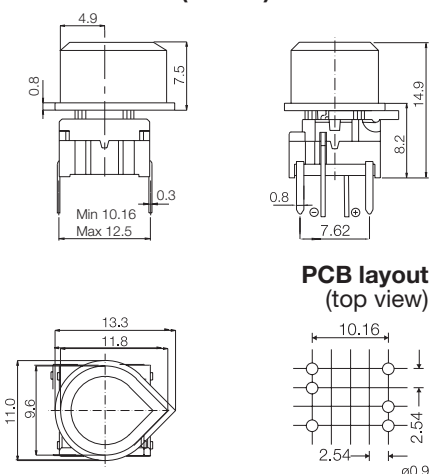


### Dimensions (through-hole)



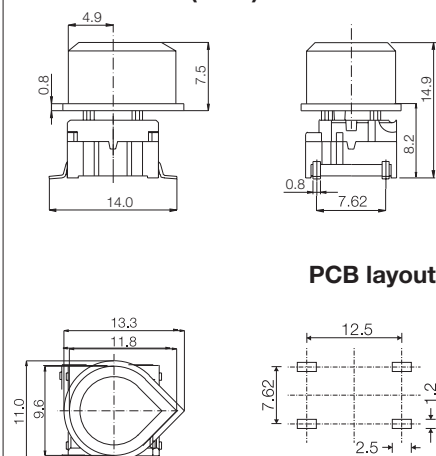
### PCB layout

### Dimensions (w/LED)



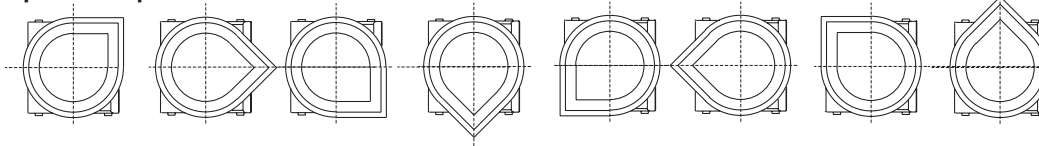
### PCB layout (top view)

### Dimensions (SMD)



### PCB layout

### 8 different position options



### How to order

**3 F**
**Switch**

**Mounting**
**T** through-hole  
**S** surface mount

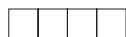
**L 6** low temp.  
**H 9** high temp.

**+**
**1 N**
**Cap**

**00** blue  
**03** grey  
**04** yellow  
**08** red  
**09** black

**3 F**
**Switch**

**Mounting**
**T** through-hole

**L 6** low temp.  
**H 9** high temp.

**LED**
**00** blue  
**20** green  
**40** yellow  
**60** white  
**80** red  
**2040** green/yellow  
**8020** red/green  
**8040** red/yellow

**+**
**1 N**
**Cap**

**10** frosted blue  
**12** frosted green  
**14** frosted yellow  
**16** frosted white  
**18** frosted red

Keycaps shown on this page can also be used on  
illume™ switch 4F - see page 13

**Ordering example:** 3FTL6 + 1N09 or 3FTL680 + 1N18

For updates of products and/or changes of specifications please see [www.mec.dk](http://www.mec.dk)

# multimec®

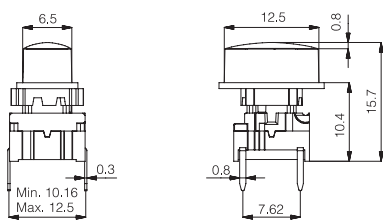
## 3F + 1WA/1WD/1WP

### Technical Data

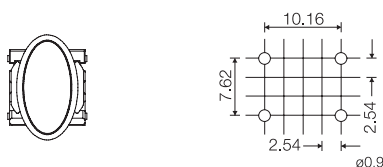
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



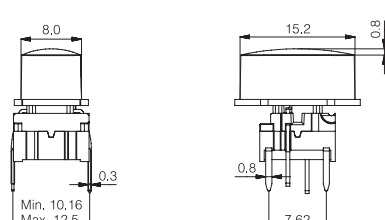
### Dimensions (through-hole) 1WA



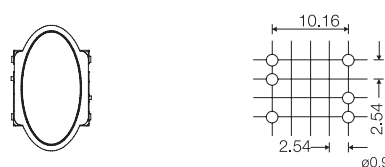
### PCB layout



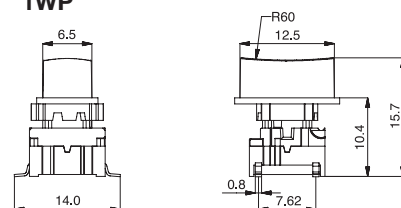
### Dimensions (w/LED) 1WD



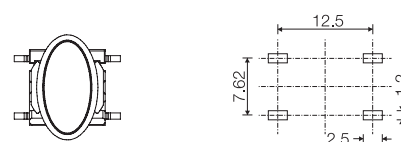
### PCB layout (top view)



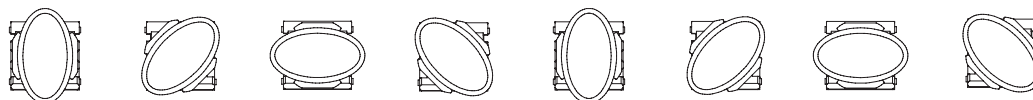
### Dimensions (SMD) 1WP



### PCB layout



### 8 different position options



### How to order

|            |                                   |                                 |   |                   |                                                                                                                                          |
|------------|-----------------------------------|---------------------------------|---|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3 F</b> |                                   |                                 | + |                   |                                                                                                                                          |
| Switch     | Mounting                          | L 6 low temp.<br>H 9 high temp. |   | Cap               | 00 blue<br>03 grey<br>08 red<br>09 black<br>30 ultra blue<br>40 pigeon blue<br>42 aqua blue<br>53 metal light grey<br>57 metal dark grey |
|            | T through-hole<br>S surface mount |                                 |   | 1WA<br>1WD<br>1WP |                                                                                                                                          |

|            |                |                                 |                                 |   |                   |                  |
|------------|----------------|---------------------------------|---------------------------------|---|-------------------|------------------|
| <b>3 F</b> | <b>T</b>       |                                 |                                 | + |                   |                  |
| Switch     | Mounting       | L 6 low temp.<br>H 9 high temp. | LED                             |   | Cap               | 16 frosted white |
|            | T through-hole |                                 | 23 green<br>45 yellow<br>88 red |   | 1WA<br>1WD<br>1WP |                  |

Keycaps shown on this page can also be used on  
illume™ switch 4F - see page 13

Ordering example: 3FTL6 + 1WA09 or 3FTL680 + 1WP16

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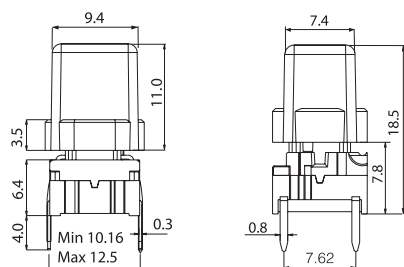
# multimec® 3F + 1X

## Technical Data

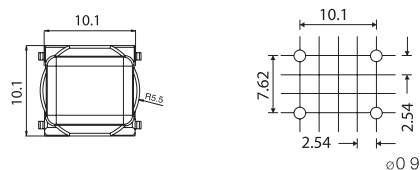
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



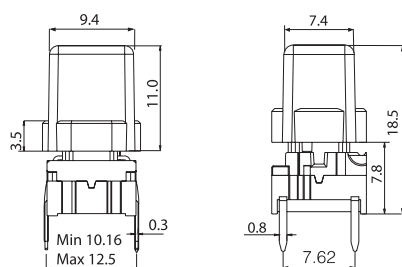
### Dimensions (through-hole)



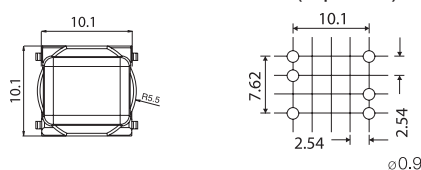
### PCB layout



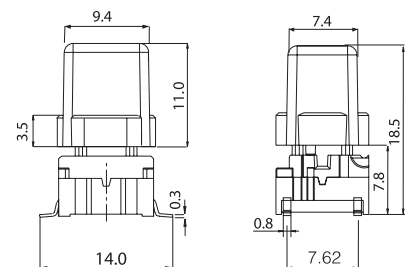
### Dimensions (w/LED)



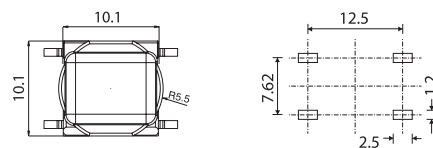
### PCB layout (top view)



### Dimensions (SMD)



### PCB layout



## How to order

**3 F**
**Switch**

**Mounting**
**T** through-hole  
**S** surface mount

**L 6** low temp.

**H 9** high temp.

**+**
**1 X**
**Cap**

**00** blue  
**02** green  
**03** grey  
**04** yellow  
**06** white  
**08** red  
**09** black

**30** ultra blue  
**40** dusty blue  
**42** aqua blue  
**32** mint green  
**33** tele grey  
**34** melon  
**38** noble red

**50** metal dark blue  
**53** metal light grey  
**57** metal dark grey  
**58** metal bordeaux

**3 F**
**Switch**

**Mounting**
**T** through-hole

**L 6** low temp.

**H 9** high temp.

**+**

**LED**
**00** blue  
**20** green  
**40** yellow  
**60** white  
**80** red  
**2040** green/yellow  
**8020** red/green  
**8040** red/yellow

**+**
**1 X**
**Cap**

**11** transparent  
**16** frosted white

Keycaps shown on this page can also be used on  
**illumec™ switch 4F** - see page 13

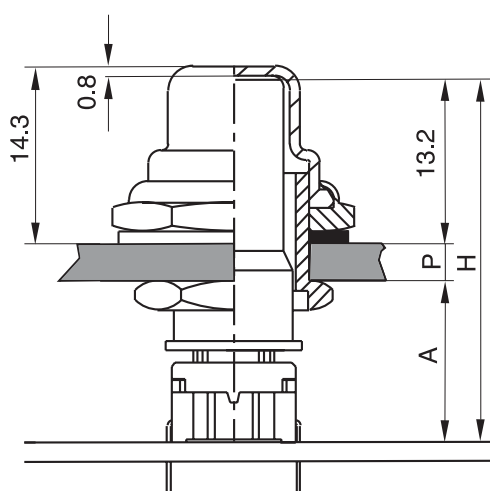
**Ordering example:** 3FTL6 + 1X09 or 3FTL680 + 1X11

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## Specifications switches: Specifications Sealing Boot:

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C

- Operating temperature:  
-40/+85°C
- IP67 sealing
- sealing life time:  
2.000.000 operations
- material: silicone



$$H = A + P + 13.2$$

This leaves nominal 0.3 mm clearance between the top of the cap and the inner side of the sealing boot to accomplish assembly tolerances. **A** can be chosen between 10 -13 mm, we recommend 10 mm to reduce building height and optimize cap guidance.

| A    | P   | CAP        | H    | BUSHING |
|------|-----|------------|------|---------|
| 10.0 | 1.0 | AQCXX-24.2 | 24.2 | AQN-0.5 |
| 10.0 | 2.0 | AQCXX-25.2 | 25.2 | AQN-0.5 |
| 10.0 | 3.0 | AQCXX-26.2 | 26.2 | AQN-2.5 |
| 10.0 | 4.0 | AQCXX-27.2 | 27.2 | AQN-2.5 |

Cap is available in black (09) or transparent (11).

The dimension H is the overall height of the switch+cap.

Bushing AQN-0.5 accepts panel thickness (P) 0.5-2.5 mm.

Bushing AQN-2.5 accepts panel thickness (P) 2.5-4.0 mm.

Panel cut out  $\varnothing$  12.0  $\pm$  0.2.

## How to order

|               |                                                 |                                               |   |                                                                                     |              |  |   |                                                                                       |                              |  |   |                                                                                       |
|---------------|-------------------------------------------------|-----------------------------------------------|---|-------------------------------------------------------------------------------------|--------------|--|---|---------------------------------------------------------------------------------------|------------------------------|--|---|---------------------------------------------------------------------------------------|
| <b>3 F</b>    |                                                 |                                               | + | <b>AQN</b>                                                                          | -            |  | + | <b>AQC</b>                                                                            | -                            |  | + | <b>AQB01</b>                                                                          |
| <b>Switch</b> | <b>Mounting</b>                                 | <b>L 6</b> low temp.<br><b>H 9</b> high temp. |   | <b>Bushing</b>                                                                      | <b>Panel</b> |  |   | <b>Cap</b>                                                                            | <b>Overall Height</b>        |  |   | <b>Sealing boot, incl. sealing ring</b>                                               |
|               | <b>T</b> through-hole<br><b>S</b> surface mount |                                               |   |  | 0.5<br>2.5   |  |   | <b>09</b> black<br><b>11</b> transparent                                              | 24.2<br>25.2<br>26.2<br>27.2 |  |   | <b>09</b> black<br><b>11</b> transparent                                              |
|               |                                                 |                                               |   |                                                                                     |              |  |   |  |                              |  |   |  |

|               |                       |                                               |                                              |   |                                                                                     |              |                                               |   |                                                                                       |                                              |   |                                               |   |                                         |                                              |
|---------------|-----------------------|-----------------------------------------------|----------------------------------------------|---|-------------------------------------------------------------------------------------|--------------|-----------------------------------------------|---|---------------------------------------------------------------------------------------|----------------------------------------------|---|-----------------------------------------------|---|-----------------------------------------|----------------------------------------------|
| <b>3 F</b>    | <b>T</b>              | <div><div></div><div></div></div>             | <div><div></div><div></div><div></div></div> | + | <b>AQN</b>                                                                          | -            | <div><div></div><div>.</div><div></div></div> | + | <b>AQC</b>                                                                            | <div><div></div><div></div><div></div></div> | - | <div><div></div><div>.</div><div></div></div> | + | <b>AQB01</b>                            | <div><div></div><div></div><div></div></div> |
| <b>Switch</b> | <b>Mounting</b>       | <b>L 6</b> low temp.<br><b>H 9</b> high temp. | <b>LED</b>                                   |   | <b>Bushing</b>                                                                      | <b>Panel</b> |                                               |   | <b>Cap</b>                                                                            | <b>Overall Height</b>                        |   |                                               |   | <b>Sealing boot, incl. sealing ring</b> |                                              |
|               | <b>T</b> through-hole |                                               | <b>00</b> blue                               |   |  | 0.5          |                                               |   |  | 24.2                                         |   |                                               |   | <b>11</b> transparent                   |                                              |
|               |                       |                                               | <b>20</b> green                              |   |                                                                                     | 2.5          |                                               |   |                                                                                       | 25.2                                         |   |                                               |   |                                         |                                              |
|               |                       |                                               | <b>40</b> yellow                             |   |                                                                                     |              |                                               |   |                                                                                       | 26.2                                         |   |                                               |   |                                         |                                              |
|               |                       |                                               | <b>60</b> white                              |   |                                                                                     |              |                                               |   |                                                                                       | 27.2                                         |   |                                               |   |                                         |                                              |
|               |                       |                                               | <b>80</b> red                                |   |                                                                                     |              |                                               |   |                                                                                       |                                              |   |                                               |   |                                         |                                              |
|               |                       |                                               | <b>2040</b> green/yellow                     |   |                                                                                     |              |                                               |   |                                                                                       |                                              |   |                                               |   |                                         |                                              |
|               |                       |                                               | <b>8020</b> red/green                        |   |                                                                                     |              |                                               |   |                                                                                       |                                              |   |                                               |   |                                         |                                              |
|               |                       |                                               | <b>8040</b> red/yellow                       |   |                                                                                     |              |                                               |   |                                                                                       |                                              |   |                                               |   |                                         |                                              |

Keycaps shown on this page can also be used on  
illumec™ switch 4F - see page 13

Ordering example: AQB0109 + AQC09-27.2 + AQN-2.5 + 3FTL6

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