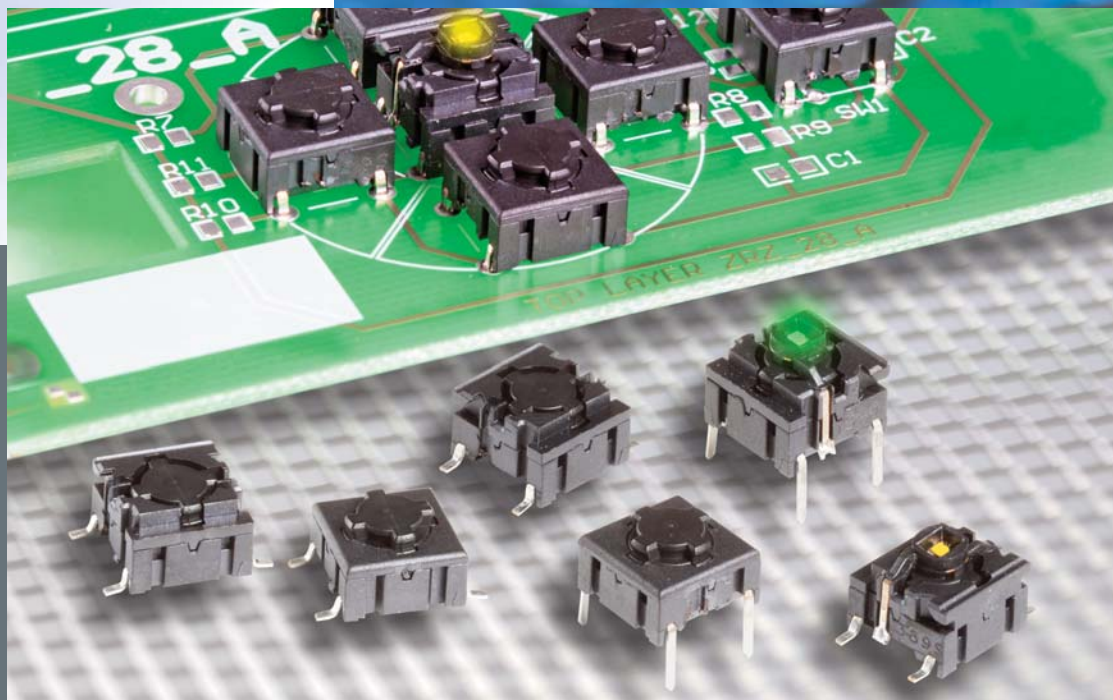




The Multimec 5E and 5G series is the new generation of the existing 3A, 3C, 3E, 3F, 4A and 4F multimec switches. The 5E and 5G series is a narrower product line, but the flexibility is more advanced. The switches will be supplied in high temperature material only to stand today's advanced soldering processes. The cap holding system is improved, by a superior snap system.

The 5E and 5G series can be supplied with LED's integrated in the switch and also as a surface mount switch. A high variety of aesthetic designed keycaps is available for the multimec switches both as solid caps, but also with excellent illumination possibilities.

The standard program will include three different actuation forces: 2, 3.5, and 6.5N. The multimec switches are known for their crisp audible tactile feel although a quiet version is available for sensitive applications such as audio, conference and military equipment.

The switch can be used as through-hole or SMD versions, and are designed to be used in a wide variety of applications.



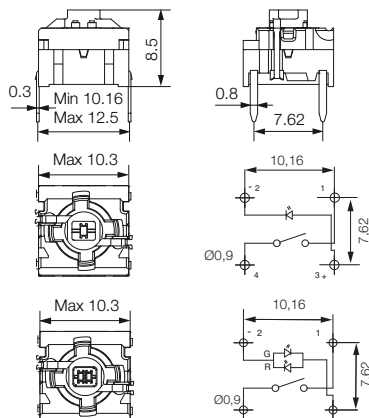
Distributor:

## Technical Data:

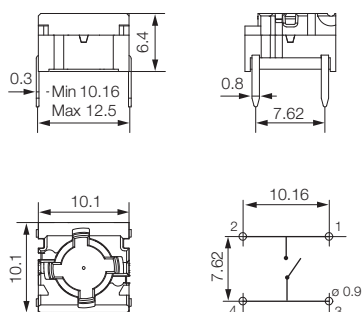
- through-hole or SMD / 50mA/24VDC / single pole/momentary
- 10.000.000 operations life time / IP67 sealing / actuation force: 2.0, 3.5, 6.5 N
- high temperature -40/+160° C



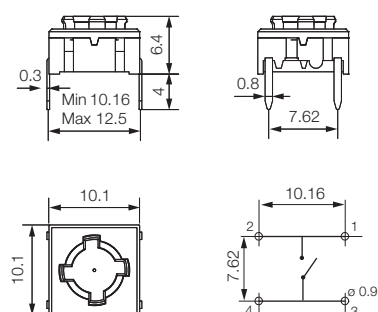
### 5GTH9 (through-hole) 1+2 LED



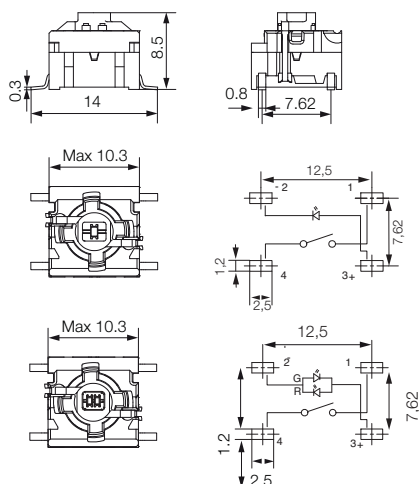
### 5GTH9 (through-hole)



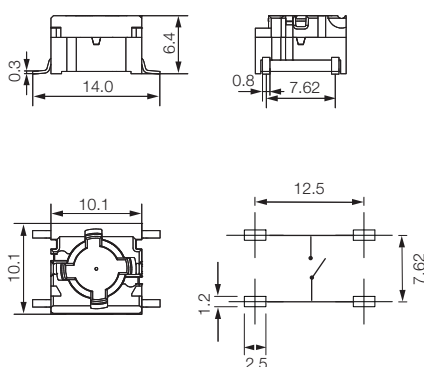
### 5ETH9 (through-hole)



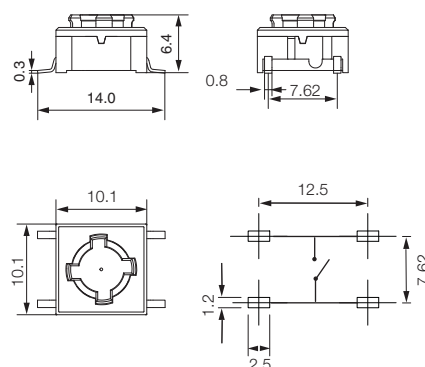
### 5GSH9 (SMD) 1+2 LEDs



### 5GSH9 (SMD)



### 5ESH9 (SMD)



## HOW TO ORDER

|               |                   |                        |                                                                                                           |  |  |
|---------------|-------------------|------------------------|-----------------------------------------------------------------------------------------------------------|--|--|
| <b>5 G</b>    |                   |                        |                                                                                                           |  |  |
| <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> | <b>LED</b>                                                                                                |  |  |
|               | TH9 through-hole  | 20                     | 01 blue / 22 green / 42 yellow / 61 white / 82 red / 2242 green/yellow / 8222 red/green / 8242 red/yellow |  |  |
|               | SH9 surface mount | 35                     |                                                                                                           |  |  |
|               |                   | 65                     |                                                                                                           |  |  |

|               |                   |                        |               |                   |                        |
|---------------|-------------------|------------------------|---------------|-------------------|------------------------|
| <b>5 E</b>    |                   |                        |               |                   |                        |
| <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> | <b>5 G</b>    |                   |                        |
|               | TH9 through-hole  | 20                     | <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> |
|               | SH9 surface mount | 35                     |               | TH9 through-hole  | 20                     |
|               |                   | 65                     |               | SH9 surface mount | 35                     |
|               |                   |                        |               |                   | 65                     |

Ordering example: 5GSH96535

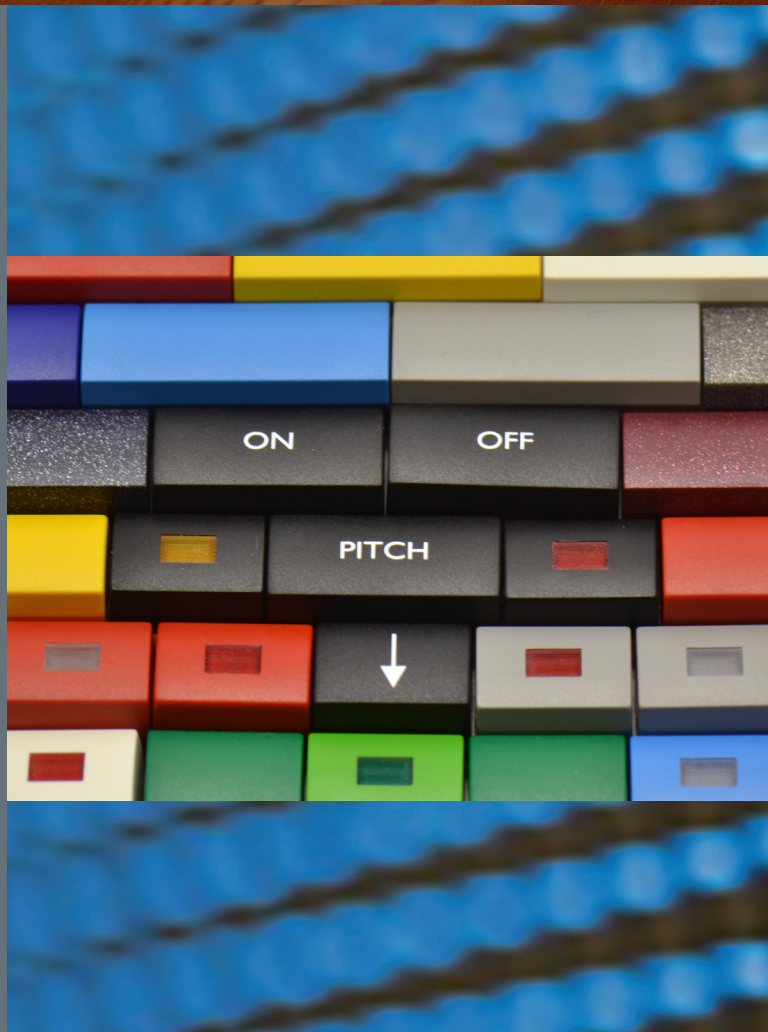
See colour codes on our website: [www.mec.dk](http://www.mec.dk)  
Dimensions (mm) Unless otherwise specified, all tolerances  $\pm 0.2$



1A/1H/1M/1ZA series caps have a hinge-type retention system which gives a rocker-action actuation when mounted on Multimec 5G switch.

Illumination can be provided with 1A in transparent colours or 1H with different colour lenses.

1A/1H, 1ZA and 1M caps offer three different dimensions, many solid and transparent colours as well as lens colours. 1A has many legend options in its standard offering; however, all caps can be provided with custom legends.

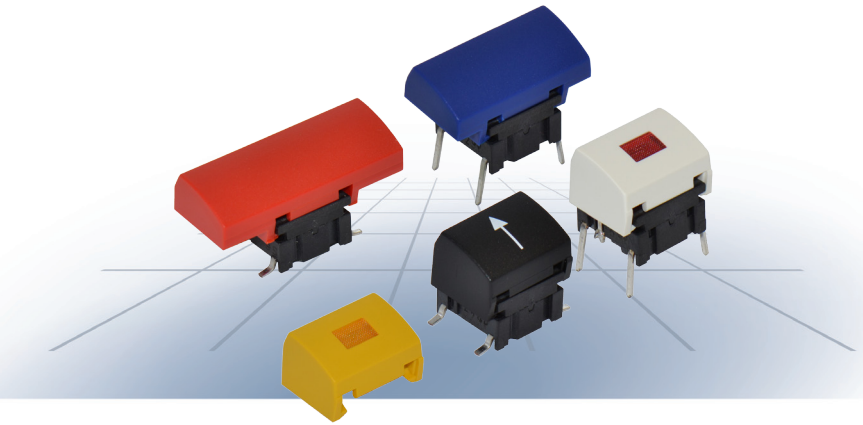


\*Letter legends on the picture are not standard

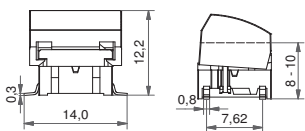
Distributor:

### Technical Data:

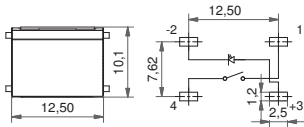
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temp. range: switch: -40/+160°C  
LED: -30/+85°C  
solid keycap: -40/+65°C  
transparent keycap: -40/+85°C
- actuation force: 2.0, 3.5, 6.5 N



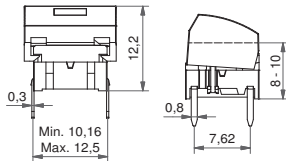
### Dimensions (SMD w/LED) 1A



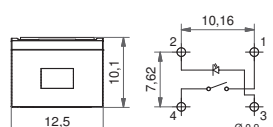
#### PCB layout



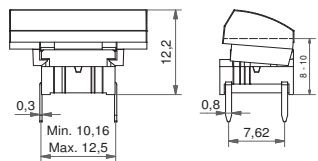
### Dimensions (TH w/LED) 1H



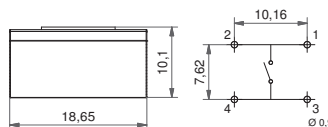
#### PCB layout



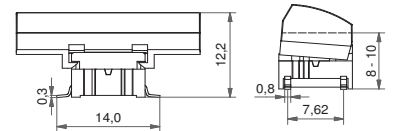
### Dimensions (through-hole) 1ZA



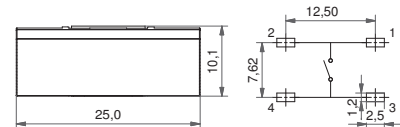
#### PCB layout



### Dimensions (SMD) 1M



#### PCB layout



### HOW TO ORDER illuminated

5 G

Switch

Mounting

TH9 through-hole  
SH9 surface mount

Actuation force

20  
35  
65  
Q\*\*

LED

01 blue  
22 green  
42 yellow  
61 white  
82 red  
2242 green/yellow  
8222 red/green  
8242 red/yellow

+

Cap

1H  
1A

Colour code 1H

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

Lens 1H

1 transparent  
2 green  
4 yellow  
6 frosted white  
8 red

Colour code 1A

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

### HOW TO ORDER non-illuminated

5 G

Switch

Mounting

TH9 through-hole  
SH9 surface mount

Actuation force

20  
35  
65  
Q\*\*

Cap

1A  
1ZA  
1M

Colour code

00 blue 30\*ultra blue 50\*metal dark blue  
02 green 40\*dusty blue 53\*metal light grey  
03\*grey 42\*aqua blue 57\*metal dark grey  
04 yellow 32 mint green 58 metal bordeaux  
06\*white 33 tele grey  
08 red 34 melon  
09\*black 38 noble red \* Colours for 1ZA

\*\*Quiet version is only available for actuation force 2.0N (20) and the letter Q is added to the end of the switch part number. See the ordering example.

**Ordering example:** 5GSH93582 + 1H068 with illumination  
5GTH965 + 1ZA57 without illumination  
\*\*5GTH92001Q with illumination or 5GSH920Q (quiet version)

Dimensions (mm) Unless otherwise specified, all tolerances +/- 0,2

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

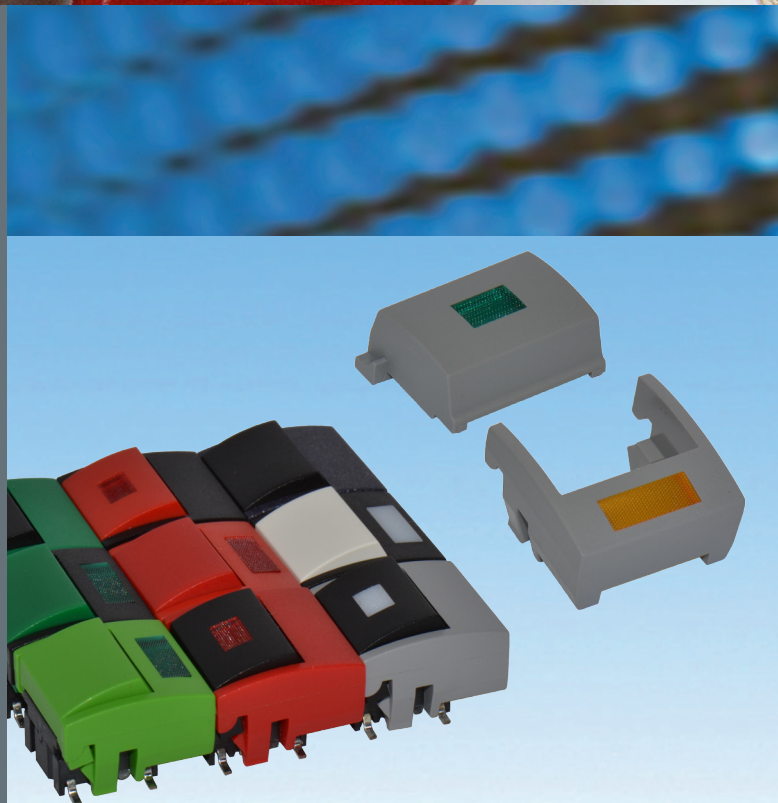
See colour codes on our website: [www.mec.dk](http://www.mec.dk)



1B/1C cap and 2C/2D bezel series have a award-winning design. The cap is connected to the bezel with a hinge-type retention system and the bezel snaps on to the switch.

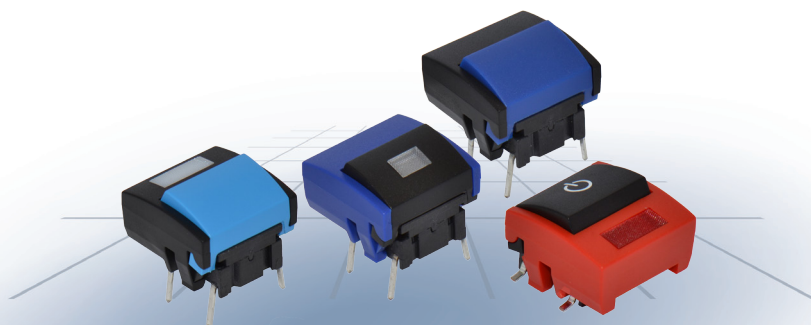
The series provides many design options with its solid and transparent colour range as well as different illumination option.

Illumination can be achieved by using 1B cap in transparent colour, 1C cap with a lens or 2D bezel with a lens where LED is placed on the PCB.

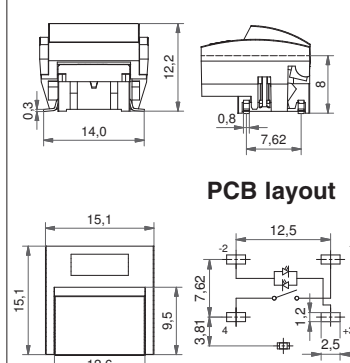
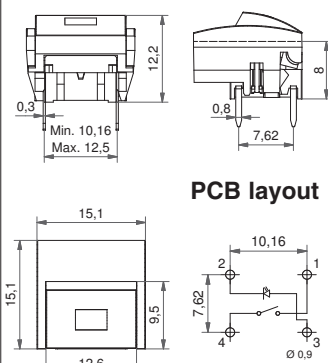
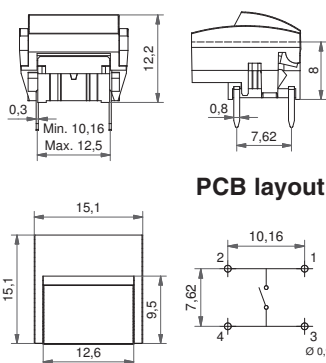
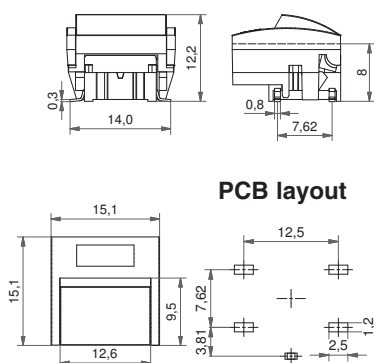


Distributor:

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temp. range: switch:-40/+160°C  
LED: -30/+85°C  
solid keycap: -40/+65°C  
transparent keycap: -40/+85°C
- actuation force: 2.0, 3.5, 6.5 N



**Dimensions (SMD w/LED)**  
**1B+2D**



|               |                                                                                     |                                                                                     |                                                                                     |                                                                                                 |                                                                                       |                                                                                       |                                                                                                    |                                                                                       |
|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>5 G</b>    |  |  |  | <b>1 C</b>                                                                                      |  |  | <b>2 C</b>                                                                                         |  |
| <b>Switch</b> | <b>Mounting</b>                                                                     | <b>Actuation force</b>                                                              | <b>LED</b>                                                                          | <b>Cap</b>  | <b>Colour code</b>                                                                    | <b>Lens</b>                                                                           | <b>Bezel</b>  | <b>Colour code</b>                                                                    |
|               | <b>TH9</b> through-hole                                                             | <b>20</b>                                                                           | <b>01</b> blue                                                                      |                                                                                                 |                                                                                       |                                                                                       |                                                                                                    |                                                                                       |
|               | <b>SH9</b> surface mount                                                            | <b>35</b>                                                                           | <b>22</b> green                                                                     | +                                                                                               | solid colour                                                                          |                                                                                       | +                                                                                                  |                                                                                       |
|               |                                                                                     | <b>65</b>                                                                           | <b>42</b> yellow                                                                    |                                                                                                 |                                                                                       |                                                                                       |                                                                                                    |                                                                                       |
|               |                                                                                     | <b>Q*</b>                                                                           | <b>61</b> white                                                                     |                                                                                                 | <b>1 B</b>                                                                            |  |                                                                                                    | <b>2 D</b>                                                                            |
|               |                                                                                     |                                                                                     | <b>82</b> red                                                                       |                                                                                                 |   | <b>Colour code</b>                                                                    |               | <b>Colour code</b>                                                                    |
|               |                                                                                     |                                                                                     | <b>2242</b> green/yellow                                                            |                                                                                                 | transparent                                                                           |                                                                                       |                                                                                                    |  |
|               |                                                                                     |                                                                                     | <b>8222</b> red/green                                                               |                                                                                                 |                                                                                       |                                                                                       |                                                                                                    |                                                                                       |
|               |                                                                                     |                                                                                     | <b>8242</b> red/yellow                                                              |                                                                                                 |                                                                                       |                                                                                       |                                                                                                    |                                                                                       |

[illegible]

## COLOUR CODES

10 frosted blue    16 frosted white  
11 transparent    18 frosted red  
12 frosted green  
14 frosted yellow

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

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

1 transparent  
2 green  
4 yellow  
6 frosted white  
8 red

Dimensions (mm) Unless otherwise specified, all tolerances  $\pm 0,2$

See colour codes on our website: [www.mec.dk](http://www.mec.dk)



The new caps for the Multimec switches 1DS / 1ES / 1FS is optimized with a “snap on” system to ensure the cap to stay on the switch actuator even under heavy vibrations or similar scenarios.

- The 1DS cap is a solid cap which can be supplied in different colours
- The 1ES cap is a solid cap like 1DS, but with a small round lens for intensive or smooth illumination
- The 1FS cap is a solid cap like 1DS, but with a large round lens for intensive or smooth illumination



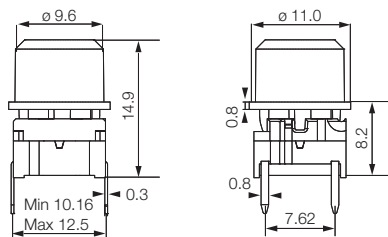
Distributor:

### Technical Data

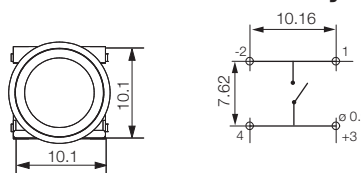
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
LED: -40/+85°C  
solid cap +65°C  
transparent +85°C
- actuation force: 2.0, 3.5, 6.5 N



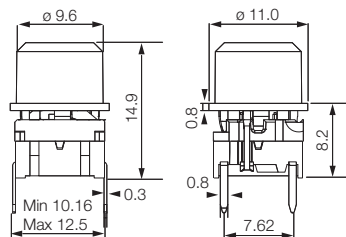
### Dimensions (through-hole)



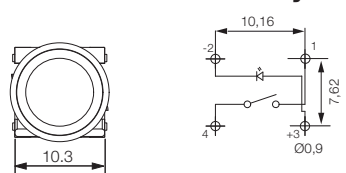
#### PCB layout



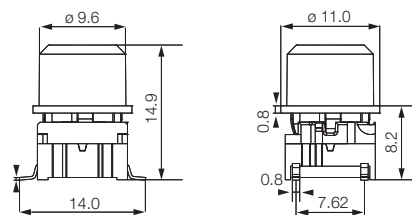
### Dimensions (w. LED)



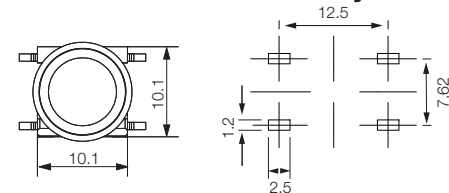
#### PCB layout



### Dimensions (SMD)



#### PCB layout



### HOW TO ORDER

|               |                          |                        |                          |                      |                         |                        |
|---------------|--------------------------|------------------------|--------------------------|----------------------|-------------------------|------------------------|
| <b>5 G</b>    |                          |                        |                          |                      |                         |                        |
| <b>Switch</b> | <b>Mounting</b>          | <b>Actuation force</b> | <b>LED</b>               | <b>Cap</b>           | <b>Colour code</b>      | <b>Lens</b>            |
|               | <b>TH9</b> through-hole  | <b>20</b>              | <b>01</b> blue           | <b>1ES</b> with lens | <b>00</b> blue          | <b>1</b> transparent   |
|               | <b>SH9</b> surface mount | <b>35</b>              | <b>22</b> green          |                      | <b>03</b> grey          | <b>6</b> frosted white |
|               |                          | <b>65</b>              | <b>42</b> yellow         | <b>1FS</b> with lens | <b>08</b> red           |                        |
|               |                          |                        | <b>61</b> white          |                      | <b>09</b> black         |                        |
|               |                          |                        | <b>82</b> red            |                      |                         |                        |
|               |                          |                        | <b>2242</b> green/yellow |                      |                         |                        |
|               |                          |                        | <b>8222</b> red/green    |                      |                         |                        |
|               |                          |                        | <b>8242</b> red/yellow   |                      |                         |                        |
|               |                          |                        |                          | <b>1DS</b>           |                         |                        |
|               |                          |                        |                          |                      | <b>11</b> transparent   |                        |
|               |                          |                        |                          |                      | <b>16</b> frosted white |                        |

|               |                          |                        |                         |                    |  |
|---------------|--------------------------|------------------------|-------------------------|--------------------|--|
| <b>5 G</b>    |                          |                        |                         |                    |  |
| <b>Switch</b> | <b>Mounting</b>          | <b>Actuation force</b> | <b>Cap</b>              | <b>Colour code</b> |  |
|               | <b>TH9</b> through-hole  | <b>20</b>              | <b>1DS</b> solid colour | <b>00</b> blue     |  |
|               | <b>SH9</b> surface mount | <b>35</b>              |                         | <b>02</b> green    |  |
|               |                          | <b>65</b>              |                         | <b>03</b> grey     |  |
|               |                          |                        |                         | <b>04</b> yellow   |  |
|               |                          |                        |                         | <b>06</b> white    |  |
|               |                          |                        |                         | <b>08</b> red      |  |
|               |                          |                        |                         | <b>09</b> black    |  |

Dimensions (mm) Unless otherwise specified, all tolerances  $\pm 0,2$

Ordering example: 5GTH935 + 1DS08

See colour codes on our website: [www.mec.dk](http://www.mec.dk)

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Tel.: +45 44 97 33 66 · Fax: +45 44 68 15 14 · E-mail: [danmec@mec.dk](mailto:danmec@mec.dk) · [www.mec.dk](http://www.mec.dk)



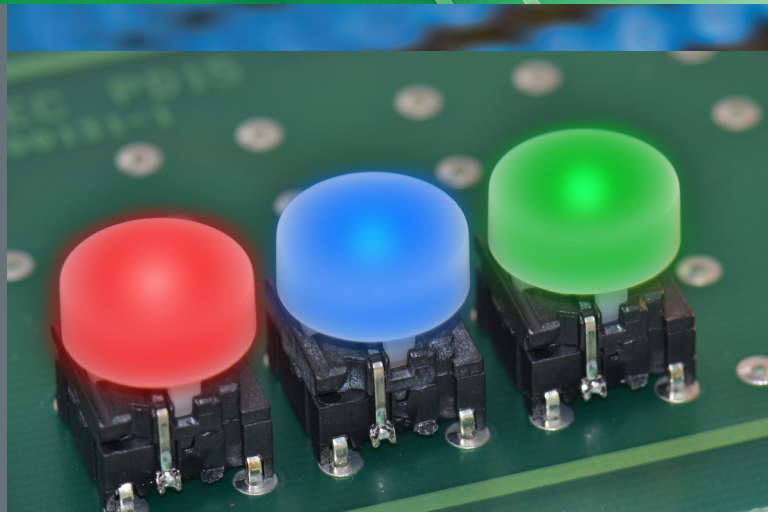
The 1GAS/1GCS caps are optimised for use with foil overlays.

Compared to conventional membrane panels it provides an extremely rugged and a long-term cost-effective solution with increased reliability, enhanced product life and improved tactile feel.

The new caps have 9 standard colour options: blue, green, grey, yellow, white, red, black, transparent and frosted white.

Even more, the under part of the new cap series has been cleared, so the caps in transparent and frosted white can provide excellent illumination.

When used with the 2SS variable height extender, the 1GAS/1GCS caps can be to any required operating height between 17.5-22.5mm.



Distributor:

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temp. range: switch:-40/+160°C  
LED: -30/+85°C  
solid keycap: -40/+160°C  
transparent keycap: -40/+85°C
- actuation force: 2.0, 3.5, 6.5 N



## HOW TO ORDER illuminated

|  |  |
|--|--|
|  |  |
|--|--|

**Colour code**

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

## 1GCS



|  |  |
|--|--|
|  |  |
|--|--|

### Colour code

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

## 1GCS



Dimensions (mm) Unless otherwise specified, all tolerances  $\pm 0,2$

See colour codes on our website: [www.mec.dk](http://www.mec.dk)

MEC A/S May 2012



MEC's exclusive snap-on keycap in 10.4 mm total height. Optimized for use with foil overlays.

The 1JS keycaps are available in nine standard colours: 00 blue/02 green/03 grey/04 yellow/06 white/08 red/09 black/11 transparent/16 frosted white.

In combination with the switch the 1JS becomes the lowest illuminated keycap possible; especially designed for foil overlays and featuring soft edges for extended foil overlay lifetime. The 1JS 11 transparent/16 frosted white has superior illumination potential when combined with the newest Multimec 5G switch. The switch can be either surface mount or through-hole. Cap retention is optimized with an innovative "snap-on" system.



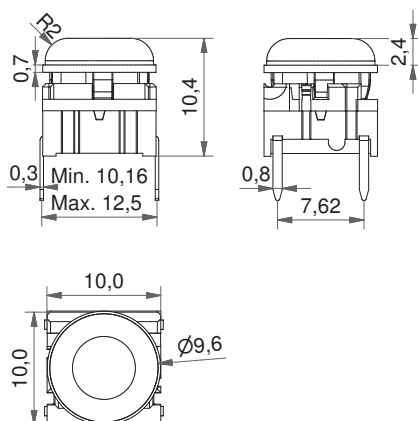
Distributor:

### Technical Data:

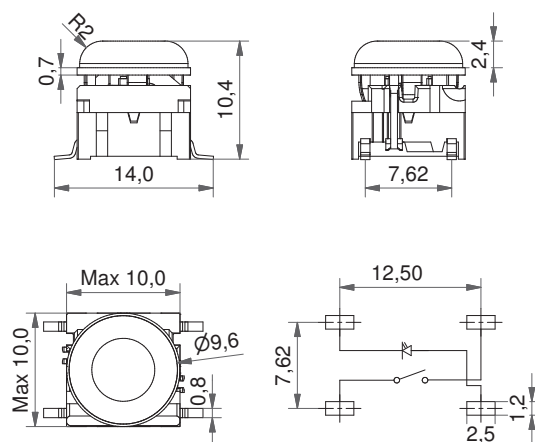
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temperature range:  
LED: -30/+85°C  
solid cap: +65°C  
transparent: +85°C
- actuation force: 2.0, 3.5, 6.5 N



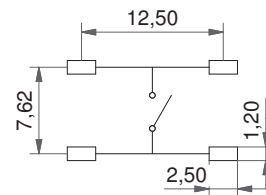
### Dimensions (through-hole)



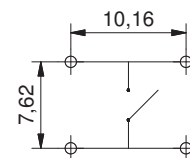
### Dimensions (SMD w/LED)



### PCB Layout SMD



### PCB Layout TH



### HOW TO ORDER

|               |                      |                        |                      |   |                                                                                       |                      |
|---------------|----------------------|------------------------|----------------------|---|---------------------------------------------------------------------------------------|----------------------|
| <b>5 G</b>    | <input type="text"/> | <input type="text"/>   | <input type="text"/> | + | <b>1 J S</b>                                                                          | <input type="text"/> |
| <b>Switch</b> | <b>Mounting</b>      | <b>Actuation force</b> | <b>LED</b>           |   | <b>Cap</b>                                                                            | <b>Colour code</b>   |
|               | TH9 through-hole     | 20                     | 01 blue              |   | 1JS transparent                                                                       | 11 transparent       |
|               | SH9 surface mount    | 35                     | 22 green             |   |  | 16 frosted white     |
|               |                      | 65                     | 42 yellow            |   |                                                                                       |                      |
|               |                      |                        | 61 white             |   |                                                                                       |                      |
|               |                      |                        | 82 red               |   |                                                                                       |                      |
|               |                      |                        | 2242 green/yellow    |   |                                                                                       |                      |
|               |                      |                        | 8222 red/green       |   |                                                                                       |                      |

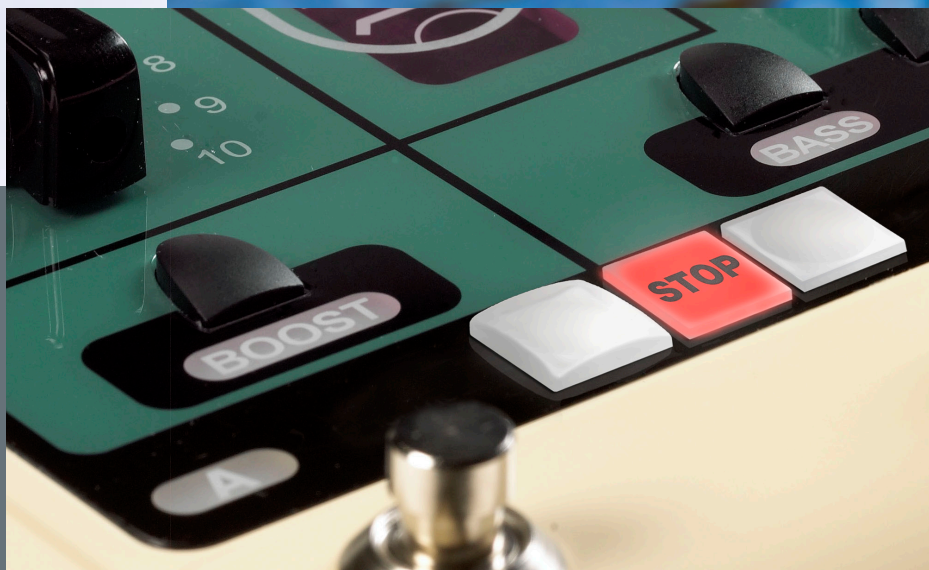
|               |                      |                        |   |                                                                                       |                      |
|---------------|----------------------|------------------------|---|---------------------------------------------------------------------------------------|----------------------|
| <b>5 G</b>    | <input type="text"/> | <input type="text"/>   | + | <b>1 J S</b>                                                                          | <input type="text"/> |
| <b>Switch</b> | <b>Mounting</b>      | <b>Actuation force</b> |   | <b>Cap</b>                                                                            | <b>Colour code</b>   |
|               | TH9 through-hole     | 20                     |   | 1JS solid colour                                                                      | 00 blue              |
|               | SH9 surface mount    | 35                     |   |  | 02 green             |
|               |                      | 65                     |   |                                                                                       | 03 grey              |
|               |                      |                        |   |                                                                                       | 04 yellow            |
|               |                      |                        |   |                                                                                       | 06 white             |
|               |                      |                        |   |                                                                                       | 08 red               |
|               |                      |                        |   |                                                                                       | 09 black             |

Dimensions (mm) Unless otherwise specified, all tolerances +/- 0,2

**Ordering example:** 5GTH935+1JS08 without illumination  
5GTH93501+1JS16 with illumination

See colour codes on our website: [www.mec.dk](http://www.mec.dk)

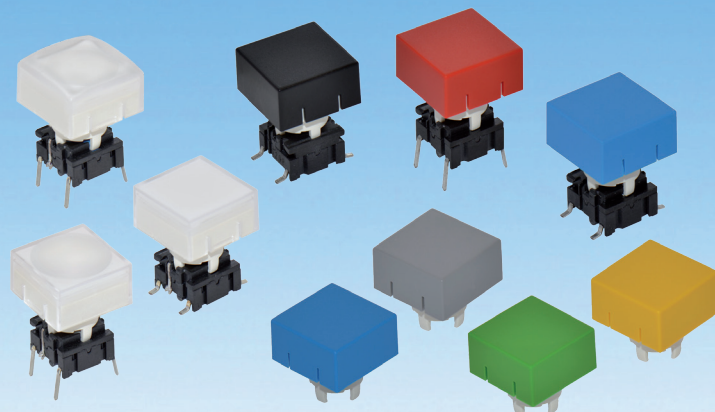
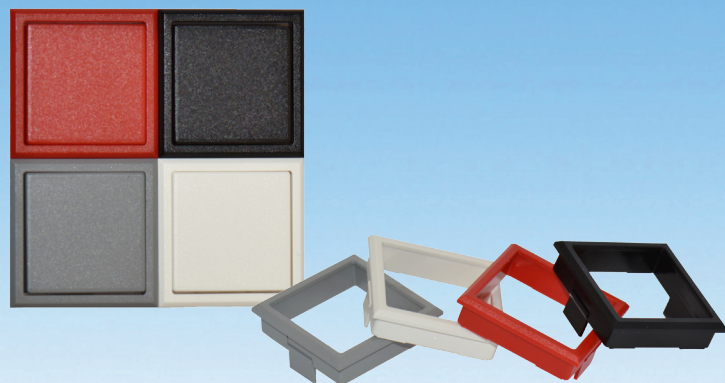
For product updates and/or changes of specifications please see [www.mec.dk](http://www.mec.dk)



The 1KS series is square caps with measurements of 14.3 x 14.3 mm and can be used with the 2K bezel, which snaps into the front panel, or alone without the bezel.

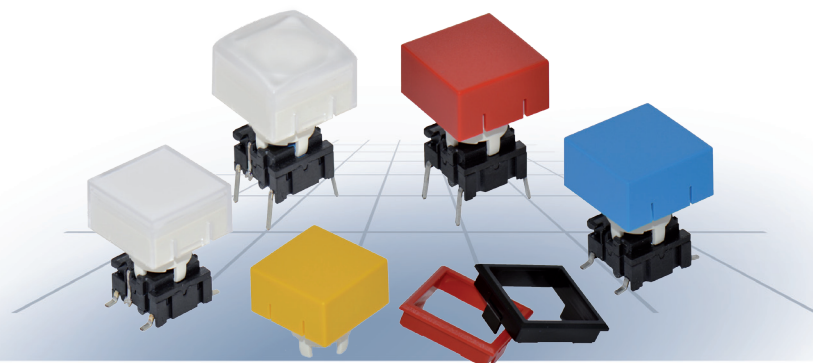
The 1KS is with a flat top, the 1KBS with a convex top and 1KCS with a concave top. All three versions are designed for illumination with a nice distribution of the illumination to the whole cap surface. The caps also offer the designer the option of using interchangeable legends or standard printed graphics. A legend can be printed on the top lid surface or a foil with the legend is placed between the transparent lid and the lens.

When used with the 2SS variable height extender, the 1KS/1KBS/1KCS caps can be to any required operating height between 24.1-29.1mm.



Distributor:

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temp. range: switch:-40/+160°C  
LED: -30/+85°C  
solid keycap: -40/+65°C  
transparent keycap: -40/+85°C
- actuation force: 2.0, 3.5, 6.5 N

[illegible]

Technical drawing of the 'Kubus' table. The top view shows a square table with an outer width of 17,75 and an inner width of 14,6. The side view shows a table with a height of 21 and a depth of 16,4.

|   |   |
|---|---|
| 5 | G |
|---|---|

## Mounting

**THIS** *discovery*

**TH9** through-hole  
**SH9** surface mount

### Actuation force

20  
35  
65  
Q\*

**LED**

01 blue  
22 green  
42 yellow  
61 white  
82 red  
2242 green/yellow  
8222 red/green  
8242 red/yellow

**Cap** frosted white lens and transparent lid

## Bezel

**03** grey  
**06** white  
**08** red  
**09** black

|   |   |
|---|---|
| 5 | G |
|---|---|

## Switch

## Mounting

**TH9** through-hole  
**SH9** surface mount

### Actuation force

20  
35  
65  
Q\*

|   |   |   |
|---|---|---|
| 1 | K | S |
|---|---|---|

**Cap**

**Colour code**

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

|   |   |  |
|---|---|--|
| 2 | K |  |
|---|---|--|

## Bezel

03 grey  
06 white  
08 red  
09 black

**Ordering example:** 5GTH93501+1KCS1116+2K09 with illumination  
5GSH965+1KS09+2K03 without illumination  
\*5GTH92082Q or 5GSH920Q (quiet version)

Dimensions (mm) Unless otherwise specified, all tolerances  $\pm 0.2$

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

**MEC A/S** Industriparken 23 • DK-2750 Ballerup • Denmark

Phone: +45 44 97 33 66 • Fax: +45 44 68 15 14 • E-mail: [danmec@mec.dk](mailto:danmec@mec.dk) • [www.mec.dk](http://www.mec.dk).



The new caps for the Multimec switches 1PS / 1QS / 1RS is optimized with a "snap on" system to ensure the cap to stay on the switch actuator even under heavy vibrations or similar scenarios.

- The 1PS cap is a solid cap which can be supplied in different colours
- The 1QS cap is a solid cap like 1PS, but with a rectangular lens for intensive or smooth illumination
- The 1RS cap is a solid cap like 1PS, but with a round lens for intensive or smooth illumination



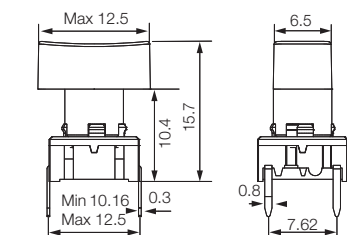
Distributor:

### Technical Data

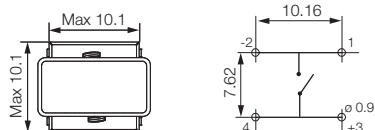
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
LED:-40/+85°C  
solid cap +65°C  
transparent +85°C
- actuation force: 2.0, 3.5, 6.5 N



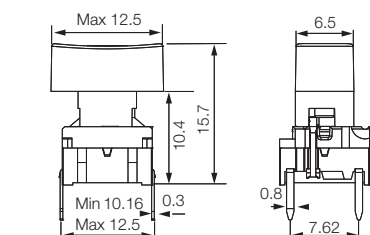
### Dimensions (through-hole)



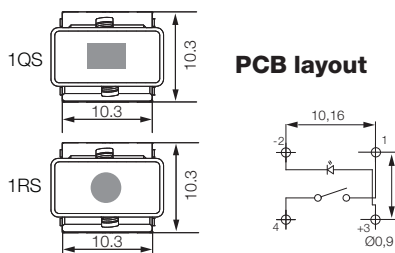
### PCB layout



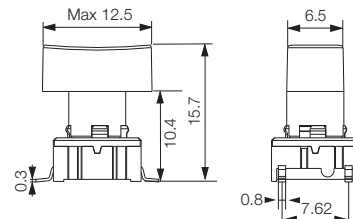
### Dimensions (w/LED)



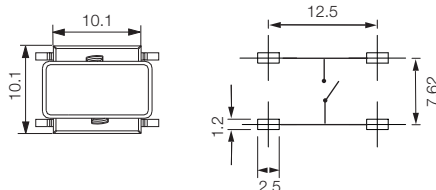
### PCB layout



### Dimensions (SMD)



### PCB layout



### HOW TO ORDER

|               |                          |                          |                          |                          |                          |                          |
|---------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>5 G</b>    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Switch</b> | <b>Mounting</b>          | <b>Actuation force</b>   | <b>LED</b>               | <b>Cap</b>               | <b>Colour code</b>       | <b>Lens</b>              |
|               | <b>TH9</b> through-hole  | <b>20</b>                | <b>01</b> blue           | <b>1QS</b> with lens     | <b>00</b> blue           | <b>1</b> transparent     |
|               | <b>SH9</b> surface mount | <b>35</b>                | <b>22</b> green          |                          | <b>03</b> grey           | <b>6</b> frosted white   |
|               |                          | <b>65</b>                | <b>42</b> yellow         | <b>1RS</b> with lens     | <b>08</b> red            |                          |
|               |                          |                          | <b>61</b> white          |                          | <b>09</b> black          |                          |
|               |                          |                          | <b>82</b> red            | <b>1PS</b>               |                          |                          |
|               |                          |                          | <b>2242</b> green/yellow |                          | <b>11</b> transparent    |                          |
|               |                          |                          | <b>8222</b> red/green    |                          | <b>16</b> frosted white  |                          |
|               |                          |                          | <b>8242</b> red/yellow   |                          |                          |                          |

### Switch to be used: 5E or 5G

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>5 E</b>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>5 G</b>               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>Mounting</b>          | <b>Actuation force</b>   | <b>Cap</b>               | <b>Colour code</b>       |                          |
| <b>TH9</b> through-hole  | <b>20</b>                | <b>1PS</b> solid colour  | <b>00</b> blue           |                          |
| <b>SH9</b> surface mount | <b>35</b>                |                          | <b>02</b> green          |                          |
|                          | <b>65</b>                |                          | <b>03</b> grey           |                          |
|                          |                          |                          | <b>04</b> yellow         |                          |
|                          |                          |                          | <b>06</b> white          |                          |
|                          |                          |                          | <b>08</b> red            |                          |
|                          |                          |                          | <b>09</b> black          |                          |

Dimensions (mm) Unless otherwise specified, all tolerances  $\pm 0,2$

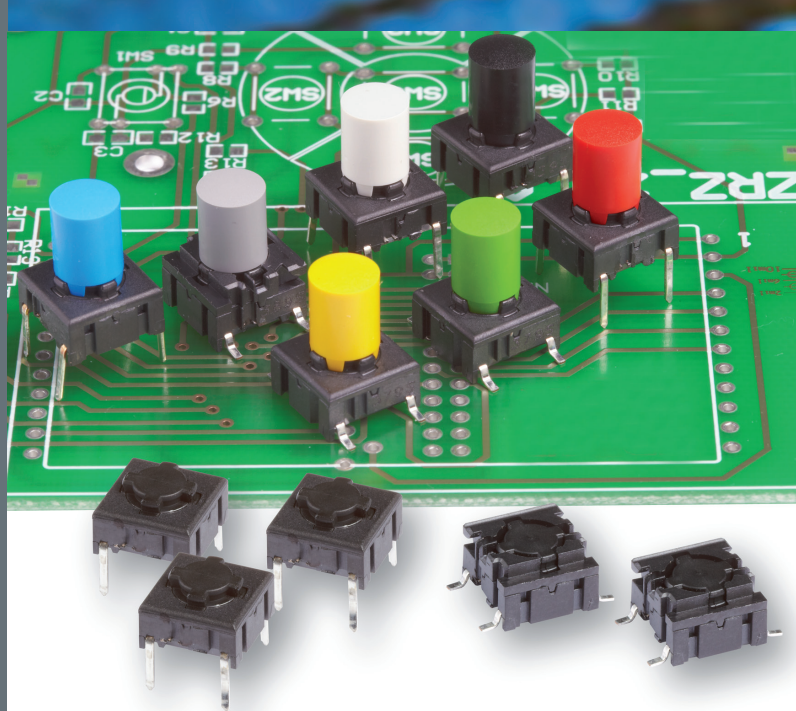
Ordering example: 5ETH935+1PS08

See colour codes on our website: [www.mec.dk](http://www.mec.dk)



The new caps for the Multimec switches 1SS/1LS/1IS are optimised with a “snap-on” system to ensure the cap to stay on the switch actuator even under heavy vibrations or similar scenarios.

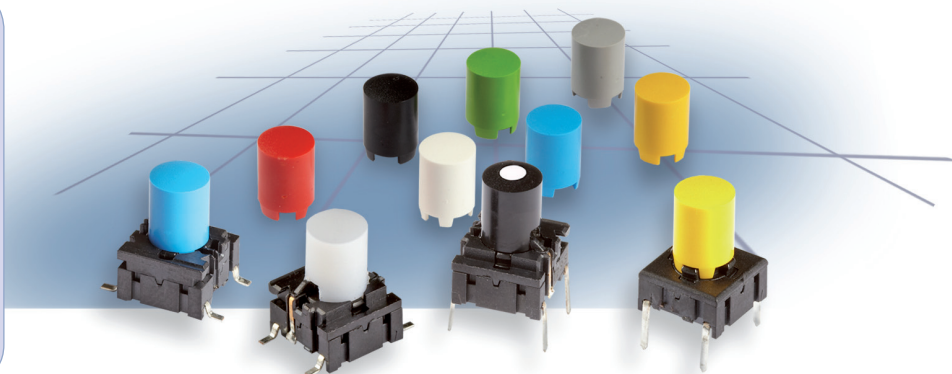
- The 1SS cap is solid cap which can be supplied in different colours
- The 1LS cap is a solid cap like 1SS, but with a small round lens for intensive or smooth illumination
- The 1IS cap is a transparent or frosted white cap like 1SS, for intensive or smooth illumination



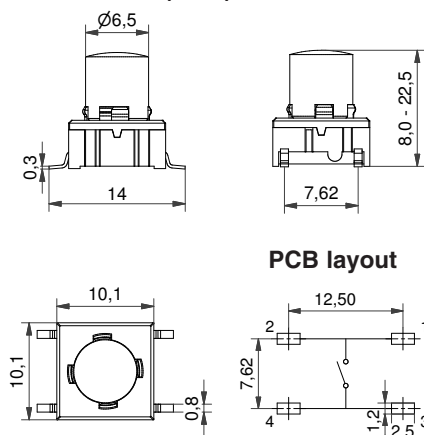
Distributor:

### Technical Data:

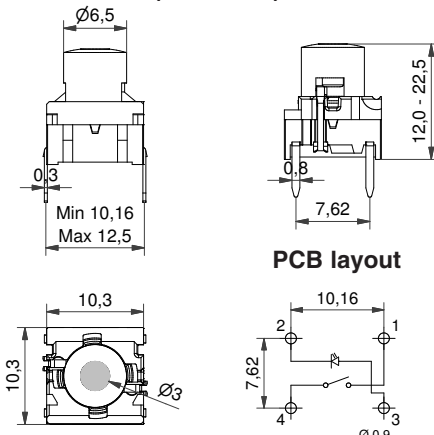
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temp. range: switch: -40/+160°C  
LED: -30/+85°C  
solid keycap: -40/+160°C  
transparent keycap: -40/+85°C
- actuation force: 2.0, 3.5, 6.5 N



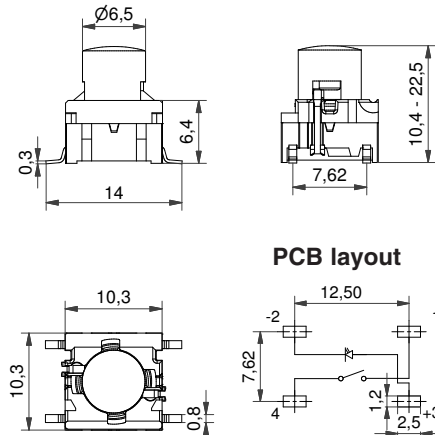
### Dimensions (SMD) + 1SS



### Dimensions (TH w/LED) + 1LS



### Dimensions (SMD w/LED) + 1IS



### HOW TO ORDER illuminated

|               |                   |                        |                   |   |               |                    |                 |                   |      |
|---------------|-------------------|------------------------|-------------------|---|---------------|--------------------|-----------------|-------------------|------|
| <b>5 G</b>    |                   |                        |                   | + |               |                    |                 |                   |      |
| <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> | <b>LED</b>        |   | <b>Cap</b>    | <b>Colour code</b> | <b>Lens</b>     | <b>Height/1LS</b> |      |
|               | TH9 through-hole  | 20                     | 01 blue           |   | 1LS with lens | 00 blue            | 1 transparent   | 12.0              | 19.0 |
|               | SH9 surface mount | 35                     | 22 green          |   |               | 03 grey            | 2 green         | 15.0              | 22.5 |
|               |                   | 65                     | 42 yellow         |   |               | 08 red             | 4 yellow        | 16.0              |      |
|               |                   | Q*                     | 61 white          |   | 1IS           | 09 black           | 6 frosted white | <b>Height/1IS</b> |      |
|               |                   |                        | 82 red            |   | transparent   | 11 transparent     | 8 red           | 10.4              | 16.0 |
|               |                   |                        | 2242 green/yellow |   |               | 16 frosted white   |                 | 11.0              | 19.0 |
|               |                   |                        | 8222 red/green    |   |               |                    |                 | 12.0              | 22.5 |
|               |                   |                        | 8242 red/yellow   |   |               |                    |                 | 15.0              |      |

### HOW TO ORDER non-illuminated

|               |                   |                        |  |   |              |                    |               |      |  |
|---------------|-------------------|------------------------|--|---|--------------|--------------------|---------------|------|--|
| <b>5 E</b>    |                   |                        |  | + |              |                    |               |      |  |
| <b>5 G</b>    |                   |                        |  |   |              |                    |               |      |  |
| <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> |  |   | <b>Cap</b>   | <b>Colour code</b> | <b>Height</b> |      |  |
|               | TH9 through-hole  | 20                     |  |   | 1SS          | 00 blue            | 08.0          | 16.0 |  |
|               | SH9 surface mount | 35                     |  |   | solid colour | 02 green           | 09.5          | 19.0 |  |
|               |                   | 65                     |  |   |              | 03 grey            | 10.4          | 22.5 |  |
|               |                   | Q*                     |  |   |              | 04 yellow          | 11.0          |      |  |
|               |                   |                        |  |   |              | 06 white           | 12.0          |      |  |
|               |                   |                        |  |   |              | 08 red             | 15.0          |      |  |
|               |                   |                        |  |   |              | 09 black           |               |      |  |

\*Only available for actuation force 2.0N (20) and the letter Q is added to the end of the switch part number. See the ordering example.

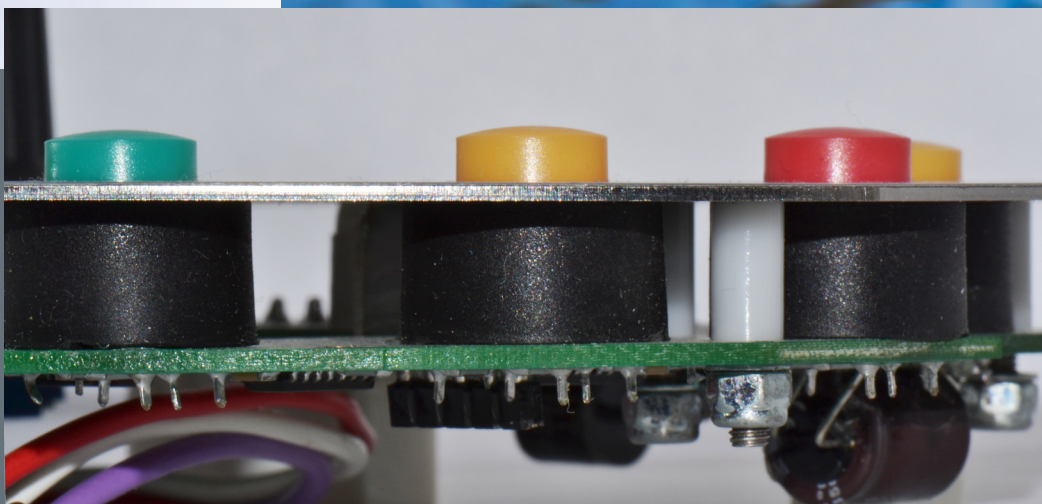
Dimensions (mm) Unless otherwise specified, all tolerances +/- 0,2

**Ordering example:** 5ETH920+1SS0409.5 without illumination  
5GSH93542+1IS1619.0 with illumination  
\*5ESH920Q or 5GTH9208222Q (quiet version)

See colour codes on our website: [www.mec.dk](http://www.mec.dk)

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

# Panel sealed 1TS/1US/1VS



The sealings 1TW/1UW/1VW provide an opportunity of having the 1TS/1US/1VS caps with panel sealing.

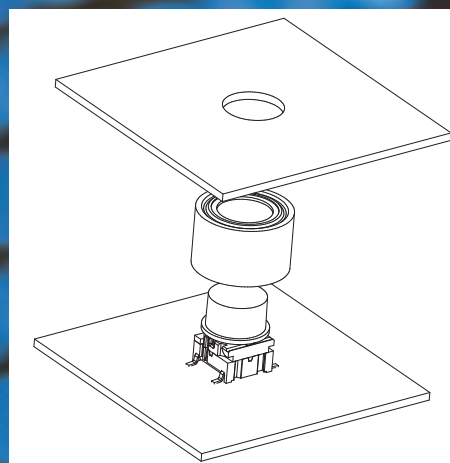
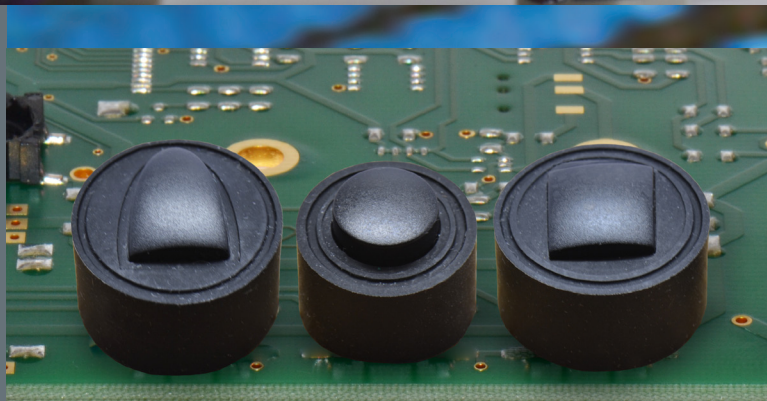
Level of sealing from front panel:

5G+1TS+1TW = IP67

5G+1US+1UW = IP67

5G+1VS+1VW = IP65

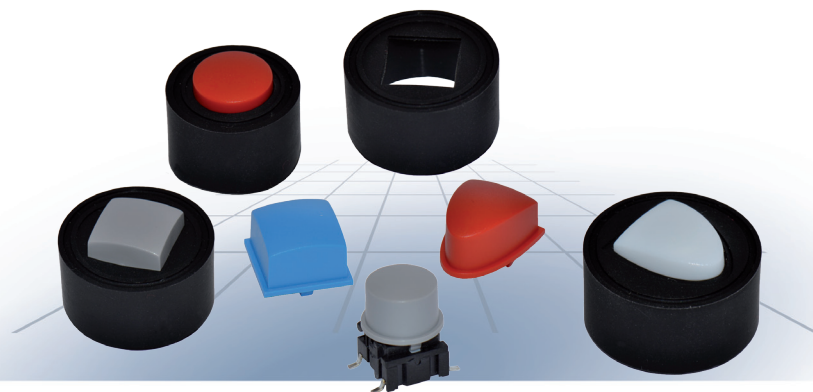
The solution is excellent for rough environment, designed for outdoor, dusty and humid applications.



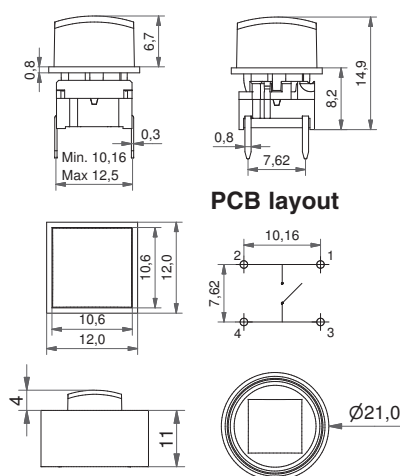
Distributor:

## Technical Data:

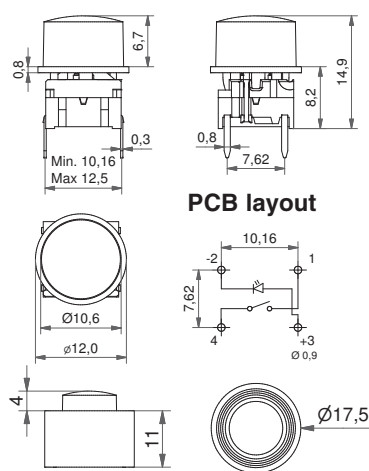
- through-hole or surface mount
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- Switch: IP67 sealing
- temp. range: switch: -40/+160°C  
LED: -30/+85°C  
solid keycap: -40/+65°C  
transparent keycap: -40/+85°C
- actuation force: 2.0, 3.5, 6.5 N



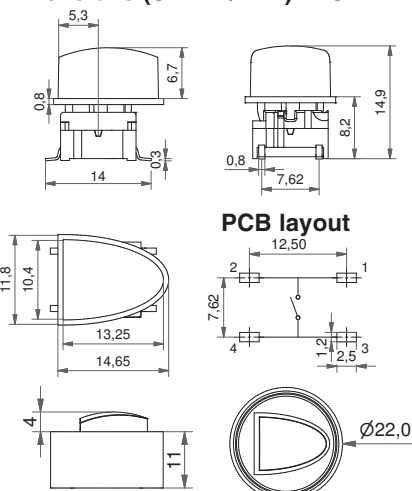
### Dimensions (TH) 1TS+1TW



### Dimensions (TH w/LED) 1US+1UW

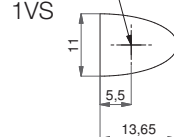


### Dimensions (SMD w/LED) 1VS+1VW

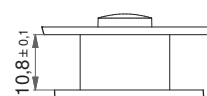


### Recommended panel cut-out

1TS - 11x11mm  
1US - Ø11mm  
1VS



Distance between PCB and front panel



### HOW TO ORDER illuminated

|               |                   |                        |                   |   |            |                    |                |   |  |
|---------------|-------------------|------------------------|-------------------|---|------------|--------------------|----------------|---|--|
| <b>5 G</b>    |                   |                        |                   | + |            |                    |                | + |  |
| <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> | <b>LED</b>        |   | <b>Cap</b> | <b>Colour code</b> | <b>Sealing</b> |   |  |
|               | TH9 through-hole  | 20                     | 01 blue           |   | 1TS        | 16 frosted white   | 1TW            |   |  |
|               | SH9 surface mount | 35                     | 22 green          |   |            |                    |                |   |  |
|               |                   | 65                     | 42 yellow         |   | 1US        |                    | 1UW            |   |  |
|               |                   | Q*                     | 61 white          |   |            |                    |                |   |  |
|               |                   |                        | 82 red            |   | 1VS        |                    | 1VW            |   |  |
|               |                   |                        | 2242 green/yellow |   |            |                    |                |   |  |
|               |                   |                        | 8222 red/green    |   |            |                    |                |   |  |
|               |                   |                        | 8242 red/yellow   |   |            |                    |                |   |  |

### HOW TO ORDER non-illuminated

|               |                   |                        |  |   |            |                    |                |   |  |
|---------------|-------------------|------------------------|--|---|------------|--------------------|----------------|---|--|
| <b>5 G</b>    |                   |                        |  | + |            |                    |                | + |  |
| <b>Switch</b> | <b>Mounting</b>   | <b>Actuation force</b> |  |   | <b>Cap</b> | <b>Colour code</b> | <b>Sealing</b> |   |  |
|               | TH9 through-hole  | 20                     |  |   | 1TS        | 00 blue            | 1TW            |   |  |
|               | SH9 surface mount | 35                     |  |   | 1US        | 03 grey            | 1UW            |   |  |
|               |                   | 65                     |  |   | 1VS        | 08 red             | 1VW            |   |  |
|               |                   | Q*                     |  |   |            | 09 black           |                |   |  |

\*Only available for actuation force 2.0N (20) and the letter Q is added to the end of the switch part number. See the ordering example.

Dimensions (mm) Unless otherwise specified, all tolerances +/- 0,2

**Ordering example:** 5GSH935 + 1TS03 + 1TW without illumination  
5GTH96542 + 1US16 + 1UW with illumination  
\*5GSH920Q or 5GTH92082Q (quiet version)

See colour codes on our website: [www.mec.dk](http://www.mec.dk)

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



Controlmec TM is a five position integrated switch solution, designed for outdoor, dusty and humid applications, to control a unit, navigate in a display, operate auxiliary equipment on a vehicle, boat or similar. The Controlmec is sealed to IP67, and exist of:

- One complete solid cap, with recess on the back site for the seal efficiency
- The unit panel plate (customers design)
- A gasket to seal between the cap, and the panel.
- A support ring to ensure the right position of sealing behind the front plate
- And then the PCB including the switches

The PCB with the switches, shall be assembled according to the MEC datasheet, and mounted to the back side of the front panel by bolts, to ensure the right pressure for the sealing efficiency.

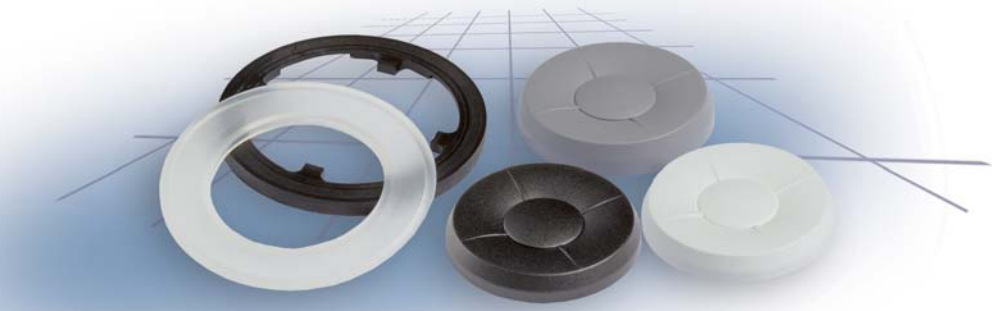
The Controlmec is an extension of the Navimec system which includes the Multimec switches, of excellent high quality and long lifetime. Configurations can be made with through hole or SMD switch versions, provided they are accurately positioned.



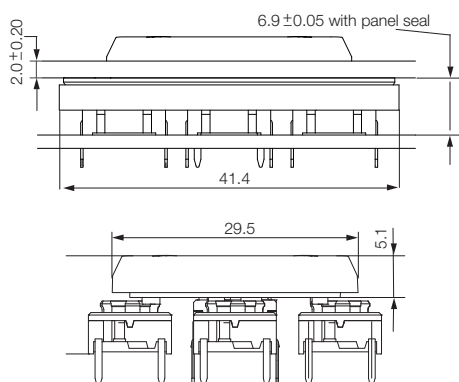
Distributor:

### Technical Data

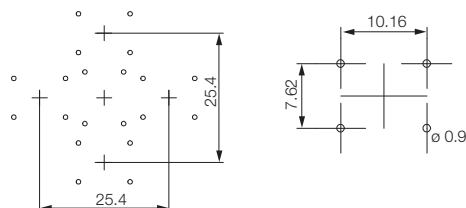
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
LED: -40/+85°C  
solid cap +65°C  
transparent +85°C
- actuation force: 2.0, 3.5, 6.5 N



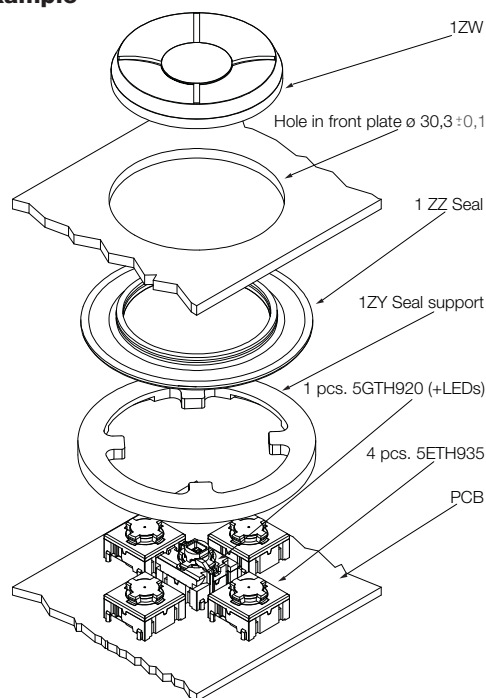
### Dimensions 1ZW



### Recommended PCB layout



### Mounting example



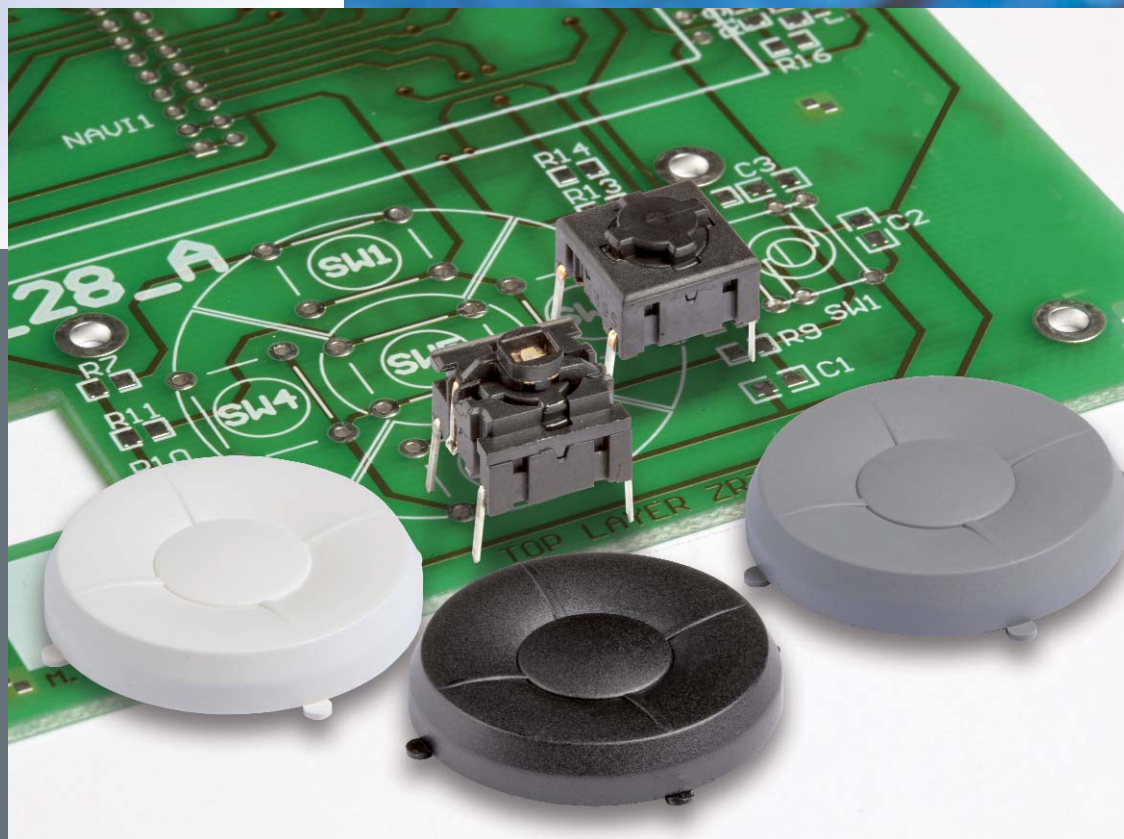
### HOW TO ORDER

| 5 G    |                   |                 |                   |                  |                  | Panel seal |                  |
|--------|-------------------|-----------------|-------------------|------------------|------------------|------------|------------------|
| Switch | Mounting          | Actuation force | LED               | Cap for seal 1ZW | Colour code      | Seal 1ZZ   | Seal support 1ZY |
|        | TH9 through-hole  | 20              | 01 blue           |                  | 00 blue          |            |                  |
|        | -hole             | 35              | 22 green          |                  | 02 green         |            |                  |
|        | SH9 surface mount | 65              | 42 yellow         |                  | 03 grey          |            |                  |
|        |                   |                 | 61 white          |                  | 04 yellow        |            |                  |
|        |                   |                 | 82 red            |                  | 06 white         |            |                  |
|        |                   |                 | 2242 green/yellow |                  | 08 red           |            |                  |
|        |                   |                 | 8222 red/green    |                  | 09 black         |            |                  |
|        |                   |                 | 8242 red/yellow   |                  | 11 transparent   |            |                  |
|        |                   |                 |                   |                  | 16 frosted white |            |                  |

| 5 E    |                   |                 |
|--------|-------------------|-----------------|
| Switch | Mounting          | Actuation force |
|        | TH9 through-hole  | 20              |
|        | SH9 surface mount | 35              |
|        |                   | 65              |

See colour codes on our website: [www.mec.dk](http://www.mec.dk)  
Dimensions (mm) Unless otherwise specified, all tolerances ± 0,2

**Ordering example (sealed version) 1ZW:** 1 x 5GTH920 + 4 x 5ETH935 + 1ZW03 + 1ZZ + 1ZY



Controlmec TM is a five position integrated switch solution, designed for easy activations for indoor and non-dusty applications, to control a unit, navigate in a display, operate auxiliary equipment indoor on a vehicle, boat or similar. The Controlmec can also be supplied as an IP67 sealed solution. The Controlmec exist of:

- One complete solid cap
- The unit panel plate (customers design)
- The PCB including the switches

The PCB with the switches, shall be assembled according to the MEC datasheet, and mounted to the back side of the front panel.

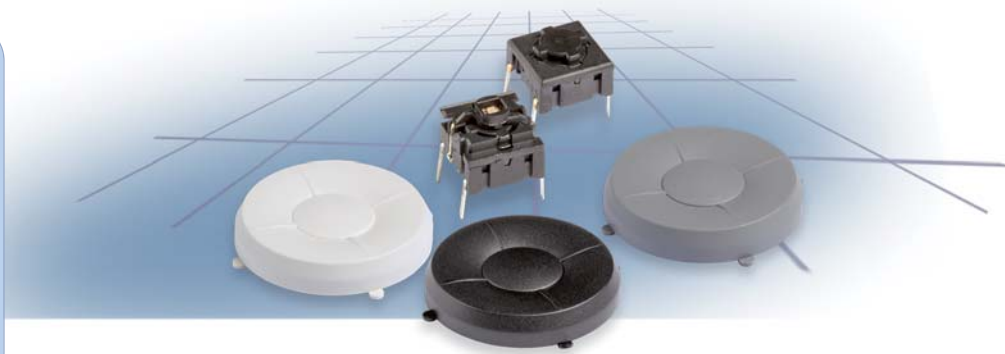
The Controlmec is an extension of the Navimec system which includes the Multimec switches, of excellent high quality and long lifetime. Configurations can be made with through hole or SMD switch versions, provided they are accurately positioned.



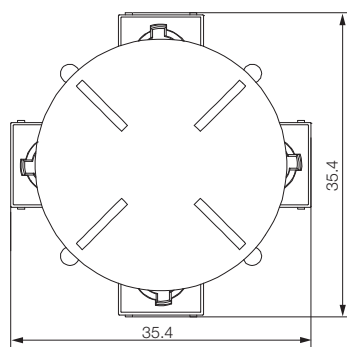
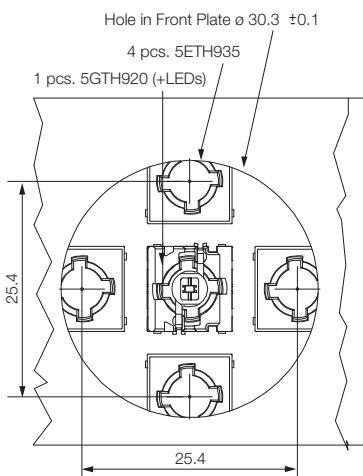
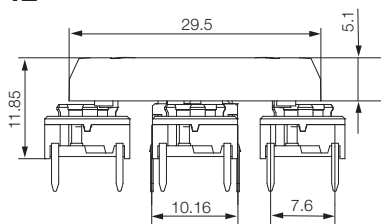
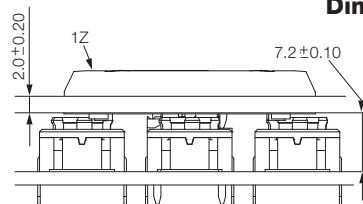
Distributor:

### Technical Data

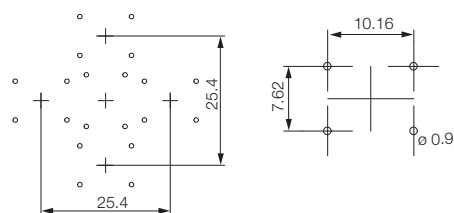
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
LED: -40/+85°C  
solid cap +65°C  
transparent +85°C
- actuation force: 2.0, 3.5, 6.5 N



### Dimensions 1Z



### Recommended PCB layout



### HOW TO ORDER

**5 G**

**Switch** **Mounting**

**TH9** through-hole  
**SH9** surface mount

**Actuation force**

**20**  
**35**  
**65**

**LED**

**01** blue  
**22** green  
**42** yellow  
**61** white  
**82** red  
**2242** green/yellow  
**8222** red/green  
**8242** red/yellow

**Cap**

**1Z**

**Colour code**

**00** blue  
**02** green  
**03** grey  
**04** yellow  
**06** white  
**08** red  
**09** black  
**11** transparent  
**16** frosted white

**5 E**

**Switch**

**Mounting**

**TH9** through-hole  
**SH9** surface mount

**Actuation force**

**20**  
**35**  
**65**

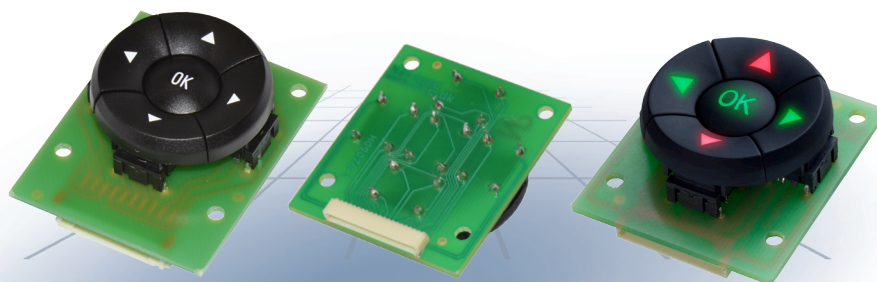
See colour codes on our website: [www.mec.dk](http://www.mec.dk)  
Dimensions (mm) Unless otherwise specified, all tolerances ±0,2

**Ordering example (unsealed version)1Z:** 1 x 5GTH920 + 4 x 5ETH935 + 1Z03

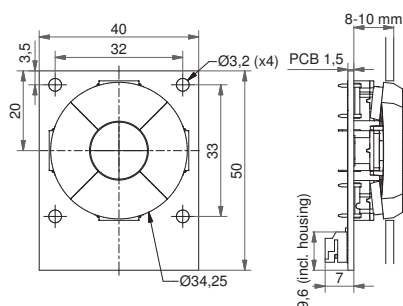
### Technical Data:

- module should be attached to the front plate with bolts (bolts not supplied by MEC)
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- switches sealed to IP67
- temperature range:  
switch body: 40/+160°C  
LED: -30/+85°C
- actuation force: 2,0. 3,5. 6,5 N

## Navimec Module standard and illuminated

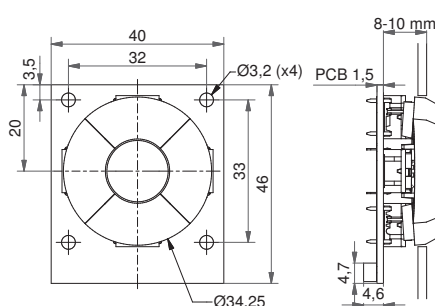


### Dimensions Standard Navimec module



\*When the 1ZB is activated the diameter changes from 34,25mm to 35,0mm

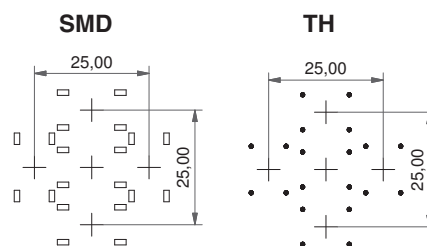
### Dimensions illuminated Navimec module



**Recommended panel cut-out:**

Ø = 35,0 - 35,5 Depending on application

## PCB layout for Navimec solution



## HOW TO ORDER

### Navimec Module ordering options:

- Navimec Module excl. keycaps
- Navimec Module incl. keycaps
- Navimec Module incl. keycaps with legends
- illuminated Navimec Module excl. keycaps
- illuminated Navimec Module incl. keycaps with legends

Part no. 9810120 - PCB and connector for Navimec Module

Part no. 9810125 - PCB and connector for illuminated Navimec Module

Part no. for switches and caps:

Navimex Module has many customisation options regarding actuation force, cap and LED colours and legends. Because of that ordering is based on part numbers of separate parts instead of one specific part number. MEC has the switches mounted on the module before delivery, which is included in the module price.

See the other side for information on switch and cap options as well as the examples below.

**For example:**

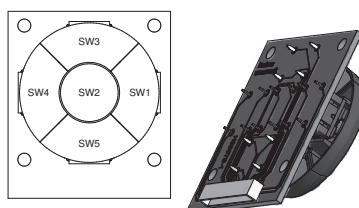
9810120 + 4x 5GTH920 + 1x 5GTH920 (without caps)

9810120 + 4x 5GTH965+1ZB42 + 1x 5GTH965+1ZCS42 (with caps)

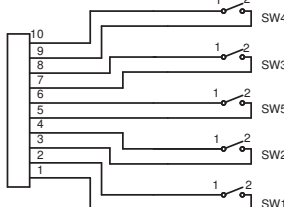
9810125 + 4x 5GTH93501+1ZB16LM136 + 1x 5GTH93501

+1ZCS16LM118 (painted caps with laser engraved legends)

### Circuit diagram Navimec module



## Standard

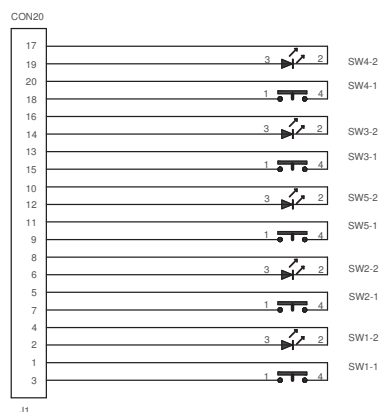


The connector on the standard Navimec module is JST SMT S108-PH-SM3-TB or similar. We recommend using:

Cable socket: JST PHR-10 or similar

Contact: JST SPH-002T-P0.5S or similar

**illuminated**



The connector on the illuminated Navimec module is CI1120M1H or similar.

We recommend using:

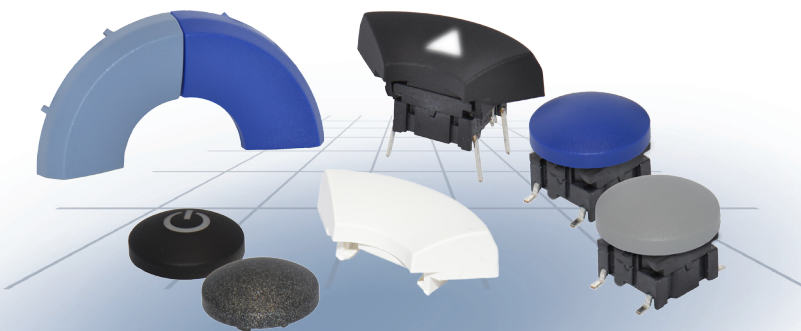
Cable socket: Cvilux CI1120S0000 or similar

Contact: Cvilux Cl11T011PP0 or similar

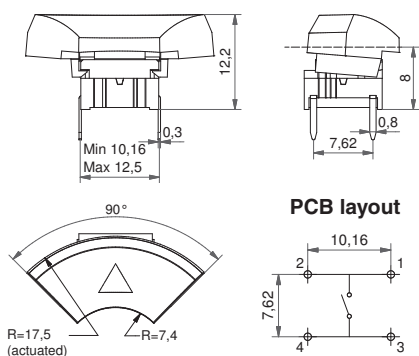
Distributor:

### Technical Data:

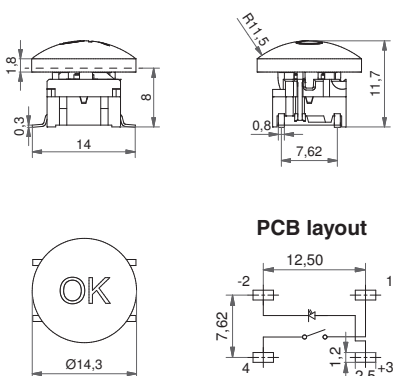
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations lifetime
- IP67 sealing
- temperature range:  
switch body: -40/+160°C  
LED: -30/+85°C
- actuation force: 2.0, 3.5, 6.5 N



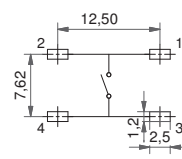
### Dimensions (through-hole) + 1ZB



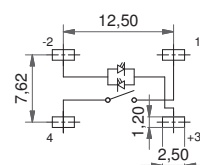
### Dimensions (SMD w/LED) + 1ZCS



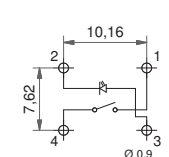
### PCB layout SMD



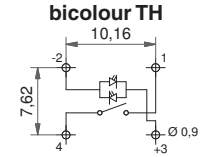
### PCB layout bicolour SMD



### PCB layout TH w/LED



### PCB layout bicolour TH



### HOW TO ORDER illuminated

5 G

Switch

Mounting

TH9 through-hole  
SH9 surface mount

Actuation force

20  
35  
65  
Q\*

LED

01 blue  
22 green  
42 yellow  
61 white  
82 red  
2242 green/yellow  
8222 red/green  
8242 red/yellow

1 Z B 1 6 L M

Cap



frosted white  
with black soft  
touch paint and  
laser marking

1 Z C S 1 6 L M

Cap



Legend code

136 ▲

Legend code

118 OK  
123 ⏻

### HOW TO ORDER non-illuminated

5 G

Switch

Mounting

TH9 through-hole  
SH9 surface mount

Actuation force

20  
35  
65  
Q\*

1 Z B

Cap



1 Z C S

Cap



Colour code

02 green  
03 grey  
06 white  
08 red  
09 black  
30 ultra blue  
40 dusty blue  
42 aqua blue  
50 metal dark blue  
53 metal light grey  
57 metal dark grey  
58 metal bordeaux

Legend code\*\*

136 ▲

Legend code\*\*

038 RESET  
105 ENTER  
118 OK  
119 SET  
120 MENU  
121 FUNC  
122 HOME  
123 ⏻

\*Quiet version only available for actuation force 2.0N (20) and the letter Q is added to the end of the switch part number. See the ordering example.

#### Ordering example:

4x 5GTH93561+1ZB16LM136 + 1x 5GTH93561+1ZCS16LM118 (with illumination)

4x 5GSH920+1ZB09 + 1x 5GSH920+1ZCS09 (without illumination)

\*5GTH92001Q or 5GSH920Q (quiet version)

For product updates and further information see our website: [www.mec.dk](http://www.mec.dk)

\*\* White legends on black caps are standard, other options are available but considered custom products.

Dimensions (mm) Unless otherwise specified, all tolerances +/- 0,2