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.
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

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

5E TH9 through-hole 20
5E SH9 surface mount 35 65

5G TH9 through-hole 20
5G SH9 surface mount 35 65

Ordering example: 5GSH96535
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*
multimec®

5G + 1A/1H/1M/1ZA

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

For updates of products and/or changes of specifications please see www.mec.dk

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

Dimensions (TH w/LED)

1H

Dimensions (through-hole)

1ZA

Dimensions (SMD)

1M

LED: -30/+85°C

Dimensions (mm) Unless otherwise specified, all tolerances +/- 0.2

HOW TO ORDER illuminated

<table>
<thead>
<tr>
<th>5G</th>
<th>Mounting</th>
<th>Actuation force</th>
<th>LED</th>
<th>Cap</th>
<th>Colour code 1H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH9</td>
<td>20 35 65 Q**</td>
<td>01 blue</td>
<td>00</td>
<td>blue 06 white</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td></td>
<td>22 green</td>
<td>02</td>
<td>green 08 red</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>42 yellow</td>
<td>03</td>
<td>grey 09 black</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>61 white</td>
<td>04</td>
<td>yellow</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>82 red</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2242 green/yellow</td>
<td>1A</td>
<td>10 frosted blue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8222 red/green</td>
<td></td>
<td>16 frosted white</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8242 red/yellow</td>
<td></td>
<td>12 frosted green</td>
</tr>
</tbody>
</table>

HOW TO ORDER non-illuminated

<table>
<thead>
<tr>
<th>5G</th>
<th>Mounting</th>
<th>Actuation force</th>
<th>Cap</th>
<th>Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH9</td>
<td>20 35 65 Q**</td>
<td>1A</td>
<td>00 blue</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td></td>
<td>02 green</td>
<td>30* ultra blue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>03 grey</td>
<td>40* dusty blue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>06 white</td>
<td>04* yellow</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>08 red</td>
<td>05* white</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>09* black</td>
<td>38* noble red</td>
</tr>
</tbody>
</table>

**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: 5GSH03582 + 1H068 with illumination
5GTH965 + 1ZA57 without illumination
**5GTH92001Q with illumination or 5GSH920Q (quiet version)

For updates of products and/or changes of specifications please see www.mec.dk

See colour codes on our website: www.mec.dk
1B/1C cap and 2C/2D bezel series have an award-winning design. The cap is connected to the bezel with a hinge-type retention system and the bezel snaps onto 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.
**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)
- **1B+2D**
- **1C+2C**

### HOW TO ORDER illuminated

<table>
<thead>
<tr>
<th>5G</th>
<th>Switch Mounting</th>
<th>Actuation force</th>
<th>LED Colour code</th>
<th>Cap Colour code</th>
<th>Lens Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH9 through-hole</td>
<td></td>
<td></td>
<td>solid colour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SH9 surface mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Dimensions (through-hole)
- **1B+2C**
- **1C+2C**

### HOW TO ORDER non-illuminated

<table>
<thead>
<tr>
<th>5G</th>
<th>Switch Mounting</th>
<th>Actuation force</th>
<th>Cap Colour code</th>
<th>Bezel Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH9 through-hole</td>
<td></td>
<td>solid colour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SH9 surface mount</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### COLOUR CODES

<table>
<thead>
<tr>
<th>Transparent caps</th>
<th>Solid caps</th>
<th>For 1B and 2C only:</th>
<th>Lenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 frosted blue</td>
<td>00 blue</td>
<td>50 metal dark blue</td>
<td>1 transparent</td>
</tr>
<tr>
<td>11 frosted white</td>
<td>06 white</td>
<td>53 metal light grey</td>
<td>2 green</td>
</tr>
<tr>
<td>18 frosted red</td>
<td>02 green</td>
<td>57 metal dark grey</td>
<td>4 yellow</td>
</tr>
<tr>
<td>12 frosted green</td>
<td>08 red</td>
<td>58 metal bordeaux</td>
<td>6 frosted white</td>
</tr>
<tr>
<td>14 frosted yellow</td>
<td>03 grey</td>
<td></td>
<td>8 red</td>
</tr>
</tbody>
</table>

*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 order example below.*

**Ordering example:** 5GTH93561+1C001+2C09 with illumination
5GSH954+1B08+2D081 without illumination
5GSH92001Q or 5GTH920Q (quiet version)

See colour codes on our website: www.mec.dk

For updates of products and/or changes of specifications please see 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
**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)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø 9.6</td>
<td>14.9</td>
</tr>
<tr>
<td>ø 11.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Min 10.16</td>
<td>Max 12.5</td>
</tr>
</tbody>
</table>

**Dimensions (w. LED)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø 9.6</td>
<td>14.9</td>
</tr>
<tr>
<td>ø 11.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Min 10.16</td>
<td>Max 12.5</td>
</tr>
</tbody>
</table>

**Dimensions (SMD)**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø 9.6</td>
<td>14.9</td>
</tr>
<tr>
<td>ø 11.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Min 10.16</td>
<td>Max 12.5</td>
</tr>
</tbody>
</table>

**HOW TO ORDER**

**5G**

<table>
<thead>
<tr>
<th>Switch</th>
<th>Mounting</th>
<th>Actuation force</th>
<th>LED</th>
<th>Cap</th>
<th>Colour code</th>
<th>Lens</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>blue</td>
<td>20</td>
<td>01</td>
<td>1FS with lens</td>
<td>00 blue</td>
<td>11 transparent</td>
</tr>
<tr>
<td>22</td>
<td>green</td>
<td>35</td>
<td>22</td>
<td>1FS with lens</td>
<td>03 grey</td>
<td>16 frosted white</td>
</tr>
<tr>
<td>42</td>
<td>yellow</td>
<td>65</td>
<td>42</td>
<td></td>
<td>08 red</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>white</td>
<td></td>
<td>61</td>
<td></td>
<td>09 black</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>red</td>
<td></td>
<td>82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2242</td>
<td>green/yellow</td>
<td></td>
<td>2242</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8222</td>
<td>red/green</td>
<td></td>
<td>8222</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8242</td>
<td>red/yellow</td>
<td></td>
<td>8242</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>transparent</td>
<td></td>
<td></td>
<td></td>
<td>11 transparent</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>frosted white</td>
<td></td>
<td></td>
<td></td>
<td>16 frosted white</td>
<td></td>
</tr>
</tbody>
</table>

**5G + 1DS/1ES/1FS**

**Technical Data**

- 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:
  - 1ES with lens
  - 1FS with lens
- Colour code:
  - 00 blue
  - 03 grey
  - 08 red
  - 09 black
- Lens:
  - 11 transparent
  - 16 frosted white

**Ordering example:** 5GTH935 + 1DS08
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.
### 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) + 1GAS

<table>
<thead>
<tr>
<th>Dimensions (SMD) + 1GAS</th>
<th>Dimensions (SMD w/LED) + 1GAS</th>
<th>Dimensions (through-hole) + 1GCS</th>
<th>Dimensions (TH w/LED) + 1GCS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PCB layout</td>
<td>PCB layout</td>
<td>PCB layout</td>
</tr>
</tbody>
</table>

### HOW TO ORDER illuminated

**5G**

<table>
<thead>
<tr>
<th>Actuation force</th>
<th>LED</th>
<th>Cap</th>
<th>Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td>20, 35, 65, Q*</td>
<td>01</td>
<td>transparent</td>
<td>11 transparent</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>blue</td>
<td>16 frosted white</td>
</tr>
<tr>
<td></td>
<td>42</td>
<td>green</td>
<td></td>
</tr>
<tr>
<td></td>
<td>61</td>
<td>yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>white</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2242</td>
<td>green/yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8222</td>
<td>red/green</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8242</td>
<td>red/yellow</td>
<td></td>
</tr>
</tbody>
</table>

### HOW TO ORDER non-illuminated

**5G**

<table>
<thead>
<tr>
<th>Actuation force</th>
<th>Cap</th>
<th>Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td>20, 35, 65, Q*</td>
<td>solid</td>
<td>00 blue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>02 green</td>
</tr>
<tr>
<td></td>
<td></td>
<td>03 grey</td>
</tr>
<tr>
<td></td>
<td></td>
<td>04 yellow</td>
</tr>
<tr>
<td></td>
<td></td>
<td>06 white</td>
</tr>
<tr>
<td></td>
<td></td>
<td>08 red</td>
</tr>
<tr>
<td></td>
<td></td>
<td>09 black</td>
</tr>
</tbody>
</table>

*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:**
- 5GSH035 + 1GAS09 without illumination
- 5GTH96501 + 1GCS16 with illumination
  *5GSH920Q or 5GTH92061Q (quiet version)*

See colour codes on our website: www.mec.dk

For updates of products and/or changes of specifications please see www.mec.dk
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.
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

<table>
<thead>
<tr>
<th>5G</th>
<th>Mounting</th>
<th>Actuation force</th>
<th>LED</th>
<th>Cap</th>
<th>Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH9</td>
<td>20 35 65</td>
<td>01 22 42 61 82 2242</td>
<td>1JS transparent</td>
<td>11 transparent 16 frosted white</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5G</th>
<th>Mounting</th>
<th>Actuation force</th>
<th>Cap</th>
<th>Colour code</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TH9</td>
<td>20 35 65</td>
<td>1JS solid colour</td>
<td>00 blue 02 green 03 grey 04 yellow 06 white 08 red 09 black</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

For product updates and/or changes of specifications please see 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.
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) + 1KS

HOW TO ORDER illuminated

5G Switch Mounting Actuation force LED Cap Bezels
TH9 through-hole 20 blue frosted white 03 grey 06 white 08 red 09 black
SH9 surface mount 25 green transparent lid
65 yellow
Q* white

5G Switch Mounting Actuation force LED Cap Bezels
TH9 through-hole 20 blue frosted white 03 grey 06 white 08 red 09 black
SH9 surface mount 25 green transparent lid
65 yellow
Q* white

Dimensions (TH w/LED) + 1KBS

Dimensions (SMD w/LED) + 1KCS

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

*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.

For updates of products and/or changes of specifications please see www.mec.dk

See colour codes on our website: www.mec.dk

Dimensions (mm) Unless otherwise specified, all tolerances +/- 0.2
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
**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)**

**Dimensions (w/LED)**

**Dimensions (SMD)**

**PCB layout**

**HOW TO ORDER**

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

**5G**
- 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: 1QS with lens, 1RS with lens, 1PS solid colour
- Colour code: 00 blue, 02 green, 03 grey, 04 yellow, 06 white, 08 red, 09 black
- Lens: 1 transparent, 6 frosted white

**5E**
- Mounting: TH9 through-hole, SH9 surface mount
- Actuation force: 20, 35, 65
- Cap: 1PS solid colour
- Colour code: 00 blue, 02 green, 03 grey, 04 yellow, 06 white, 08 red, 09 black

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

**Ordering example:** 5ETH935+1PS08

See colour codes on our website: 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
### 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

#### PCB layout

#### 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

#### Colour code
- 00 blue
- 03 grey
- 08 red
- 09 black
- 11 transparent
- 16 frosted white
- 82 red

#### Lens
- 1 transparent
- 2 green
- 4 yellow
- 6 frosted white
- 8 red

#### Height/1LS
- 10.4
- 11.0
- 12.0
- 19.0
- 22.5
- 15.0

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

#### PCB layout

#### 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

#### Colour code
- 00 blue
- 03 grey
- 08 red
- 09 black
- 11 transparent
- 16 frosted white
- 82 red

#### Lens
- 1 transparent
- 2 green
- 4 yellow
- 6 frosted white
- 8 red

#### Height/1LS
- 10.4
- 11.0
- 12.0
- 19.0
- 22.5
- 15.0

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

#### PCB layout

#### 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

#### Colour code
- 00 blue
- 03 grey
- 08 red
- 09 black
- 11 transparent
- 16 frosted white
- 82 red

#### Lens
- 1 transparent
- 2 green
- 4 yellow
- 6 frosted white
- 8 red

#### Height/1LS
- 10.4
- 11.0
- 12.0
- 19.0
- 22.5
- 15.0

### HOW TO ORDER illuminated

#### 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

#### Colour code
- 00 blue
- 03 grey
- 08 red
- 09 black
- 11 transparent
- 16 frosted white
- 82 red

#### Lens
- 1 transparent
- 2 green
- 4 yellow
- 6 frosted white
- 8 red

#### Height/1LS
- 10.4
- 11.0
- 12.0
- 19.0
- 22.5
- 15.0

### HOW TO ORDER non-illuminated

#### 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

#### Colour code
- 00 blue
- 02 green
- 03 grey
- 04 yellow
- 06 white
- 08 red
- 09 black

#### Lens
- 1 transparent
- 2 green
- 4 yellow
- 6 frosted white
- 8 red

#### Height/1LS
- 10.4
- 11.0
- 12.0
- 19.0
- 22.5
- 15.0

### Ordering example:

**5ETH920+1SS0409.5** without illumination

**5GSH93542+1IS1619.0** with illumination

*5ESH920Q or 5GTH9208222Q (quiet version)*

For updates of products and/or changes of specifications please see www.mec.dk
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.
**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

**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 Colour code**
- 16 frosted white

**Sealing**
- 1TW

**Ordering example:**
- 5GSH935 + 1TS03 + 1TW without illumination
- 5GTH96542 + 1US16 + 1UW with illumination
- *5GSH920Q or 5GTH92082Q (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.*

**Dimensions (mm) Unless otherwise specified, all tolerances +/- 0.2**

**Recommended panel cut-out**
- 1TS - 11x11mm
- 1US - Ø11mm
- 1VS - 13.65mm

**Distance between PCB and front panel**

---

**Table:**

<table>
<thead>
<tr>
<th><strong>Switch</strong></th>
<th><strong>Mounting</strong></th>
<th><strong>Actuation force</strong></th>
<th><strong>LED</strong></th>
<th><strong>Cap</strong></th>
<th><strong>Colour code</strong></th>
<th><strong>Sealing</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>5G</td>
<td>TH9</td>
<td>20</td>
<td>01</td>
<td>1TS</td>
<td>16</td>
<td>1TW</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td>35</td>
<td>22</td>
<td>1US</td>
<td></td>
<td>1UW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65</td>
<td>42</td>
<td>1VS</td>
<td></td>
<td>1VW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Q*</td>
<td>61</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

For updates of products and/or changes of specifications please see 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.
### 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

#### Mounting example

#### Recommended PCB layout

### HOW TO ORDER

<table>
<thead>
<tr>
<th>Switch</th>
<th>Mounting</th>
<th>Actuation force</th>
<th>LED</th>
<th>Cap for seal</th>
<th>Colour code</th>
<th>Seal</th>
<th>Seal support</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ZW</td>
<td>TH9</td>
<td>20</td>
<td>01  blue</td>
<td>1ZW</td>
<td>00 blue</td>
<td>1ZZ</td>
<td>1ZY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>22  green</td>
<td></td>
<td>02 green</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>42  yellow</td>
<td></td>
<td>03 grey</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>61  white</td>
<td></td>
<td>04 yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>82  red</td>
<td></td>
<td>06 white</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2242 green/yellow</td>
<td></td>
<td>08 red</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8222 red/green</td>
<td></td>
<td>09 black</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8242 red/yellow</td>
<td></td>
<td>11 transparent</td>
<td>16 frosted white</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switch</th>
<th>Mounting</th>
<th>Actuation force</th>
</tr>
</thead>
<tbody>
<tr>
<td>5G</td>
<td>TH9</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65</td>
</tr>
</tbody>
</table>

### Panel seal

<table>
<thead>
<tr>
<th>Colour code</th>
<th>Seal</th>
<th>Seal support</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 blue</td>
<td>1ZZ</td>
<td></td>
</tr>
<tr>
<td>02 green</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03 grey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04 yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06 white</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08 red</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09 black</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 transparent</td>
<td>16 frosted white</td>
<td></td>
</tr>
</tbody>
</table>

See colour codes on our website: 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

---

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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.
### 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

### HOW TO ORDER

#### 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

---

### Dimensions 1Z

- Hole in Front Plate ø 30.3 ± 0.1
- 4 pcs. 5ETH935
- 1 pcs. 5GTH920 (+LEDs)

### Recommended PCB layout

---

### 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

Dimensions Standard Navimec module

Dimensions illuminated Navimec module

Recommended panel cut-out:
- $d = 35.0 - 35.5$ 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:
Navimec 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

The connector on the standard Navimec module is JST SMT S108-PH-SM3-TB or similar. We recommend using:
- Cable socket: JST PFR-10 or similar
- Contact: JST SPH-002T-P0.5S or similar

The connector on the illuminated Navimec module is C11120M1H or similar. We recommend using:
- Cable socket: Cvilux C11120S0000 or similar
- Contact: Cvilux C111T011PP0 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

<table>
<thead>
<tr>
<th>Switch Mounting</th>
<th>Actuation Force</th>
<th>LED Code</th>
<th>Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH9 through-hole</td>
<td>20</td>
<td>01 blue</td>
<td>Frosted white with black soft touch paint and laser marking</td>
</tr>
<tr>
<td>SH9 surface mount</td>
<td>35</td>
<td>22 green</td>
<td></td>
</tr>
<tr>
<td></td>
<td>65</td>
<td>42 yellow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Q*</td>
<td>61 white</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PCB Layout</th>
<th>Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMD</td>
<td>Frosted white with black soft touch paint and laser marking</td>
</tr>
</tbody>
</table>

### PCB layout SMD

<table>
<thead>
<tr>
<th>PCB Layout TH w/LED</th>
<th>PCB Layout bicolour SMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK</td>
<td>OK</td>
</tr>
</tbody>
</table>

### HOW TO ORDER illuminated

<table>
<thead>
<tr>
<th>Switch</th>
<th>Mounting</th>
<th>Actuation Force</th>
<th>LED Code</th>
<th>Cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>5G</td>
<td>TH9</td>
<td>01 blue</td>
<td>Frosted white with black soft touch paint and laser marking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td>22 green</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>42 yellow</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>61 white</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### HOW TO ORDER non-illuminated

<table>
<thead>
<tr>
<th>Switch</th>
<th>Mounting</th>
<th>Actuation Force</th>
<th>Colour Code</th>
<th>Legend Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5G</td>
<td>TH9</td>
<td>01 blue</td>
<td>02 green</td>
<td>136 ▲</td>
</tr>
<tr>
<td></td>
<td>SH9</td>
<td>03 grey</td>
<td>03 grey</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>06 white</td>
<td>06 white</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>08 red</td>
<td>08 red</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>09 black</td>
<td>09 black</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 ultra blue</td>
<td>30 ultra blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 dusty blue</td>
<td>40 dusty blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>42 aqua blue</td>
<td>42 aqua blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 metal dark blue</td>
<td>50 metal dark blue</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>53 metal light grey</td>
<td>53 metal light grey</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>57 metal dark grey</td>
<td>57 metal dark grey</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>58 metal bordeaux</td>
<td>58 metal bordeaux</td>
<td></td>
</tr>
</tbody>
</table>

*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

Dimensions (mm) Unless otherwise specified, all tolerances +/− 0.2