

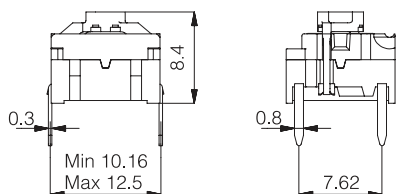
# multimec<sup>®</sup> illumec™ 4A

## Technical Data

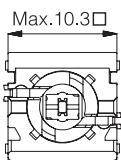
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
high temp. switch: -40/+160°C  
LED: -30/+85°C



### Dimensions (through-hole)

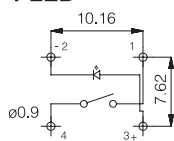


### Top View

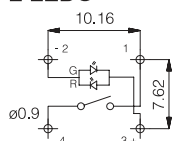


### PCB layout and Circuit Diagram

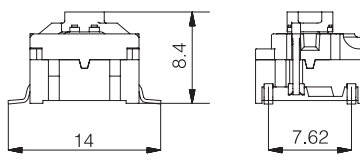
#### 1 LED



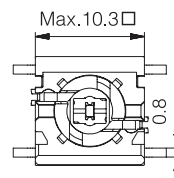
#### 2 LEDs



### Dimensions (SMD)

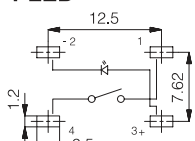


### Top View

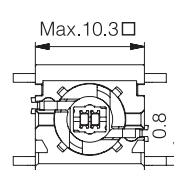
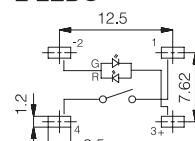


### PCB layout and Circuit Diagram

#### 1 LED



#### 2 LEDs



Technical specifications for 4A switch and LEDs see pages 35 and 36

## How to order

**4 A**

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

+

**LED**  
**01**  
**22**  
**42**  
**61**  
**82**  
**2242**  
**8222**  
**8242**



**1A** 10,12,14,16,18  
**1B** 10,12,14,16,18

**Cap** **Solid** **Illuminated**  
**Colour** **Lens**



**1H** Solid Colour + lens 1,2,4,6,8  
**1C** Solid Colour + lens 1,2,4,6,8 +

+ **2 C**   or **2 D**    
**Bezel** **Solid** **Bezel** **Solid** **Illuminated**  
**Colour** **Colour** **Colour** **Lens**



**2 C**   or **2 D**

**Bezel** **Solid** **Bezel** **Solid** **Illuminated**  
**Colour** **Colour** **Colour** **Lens**



## Colour codes

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

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

**Lenses**  
**1** transparent  
**2** green  
**4** yellow  
**6** frosted white  
**8** red

## Solid Colours Caps and Bezels

**For 1A, 1B and 2C only:**  
**00** blue  
**02** green  
**03** grey  
**04** yellow  
**06** white  
**08** red  
**09** black  
**30** ultra blue  
**40** dusty blue  
**42** aqua blue  
**32** mint green  
**33** tele grey  
**34** melon  
**38** noble red  
**50** metal dark blue  
**53** metal light grey  
**57** metal dark grey  
**58** metal bordeaux

## Dimensions

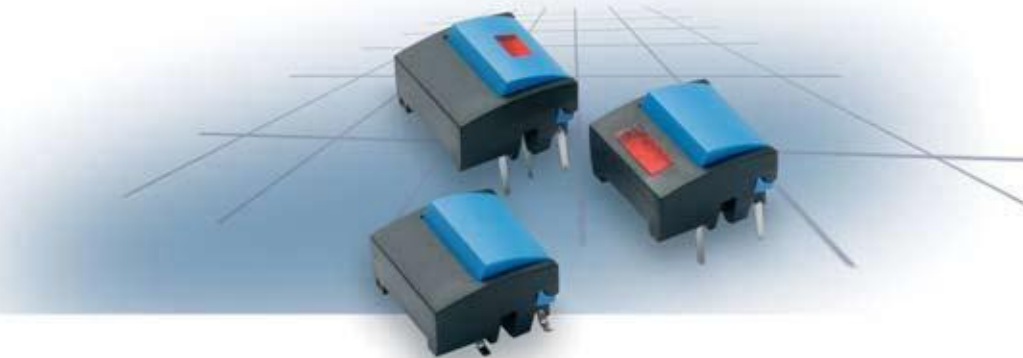
**Caps** **See Page**  
**1A - 1H** 11  
**1B - 1C** 10  
**2C - 2D** Same as for 2A/B 10

# multimec®

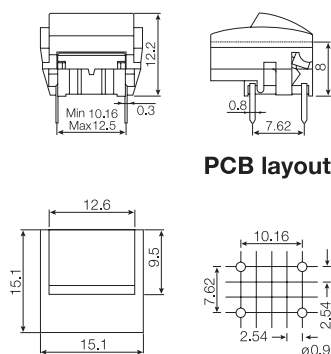
## 3A + 1B/1C + 2A/2B

### Technical Data

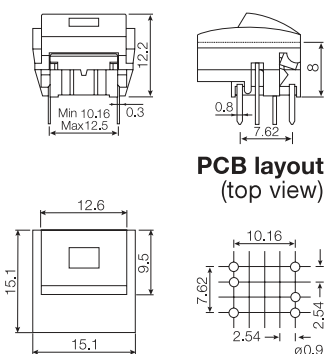
- ? through-hole or SMD
- ? 50mA/24VDC
- ? single pole/momentary
- ? 10.000.000 operations life time
- ? IP67 sealing
- ? temperature range:
  - low temp: -40/+115°C
  - high temp: -40/+160°C



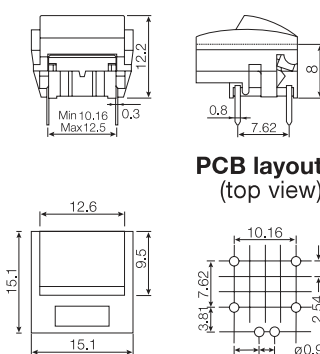
### Dimensions (through-hole)



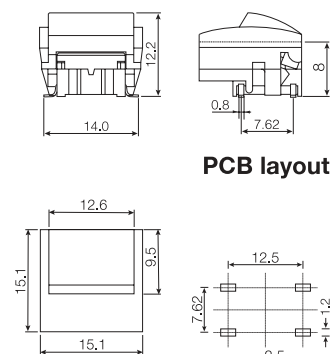
### Dimensions w/LED in switch (1C)



### Dimensions w/LED PCB mounted (2B)



### Dimensions (SMD)



### How to order

<b>3 A</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 B</b>	<input type="checkbox"/>	+	<b>2 A</b>	<input type="checkbox"/>	<b>For 1B and 2A only:</b>	
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.		<b>Cap</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black		<b>Bezel</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black	<b>30</b> ultra blue <b>40</b> dusty blue <b>42</b> aqua blue <b>32</b> mint green <b>33</b> tele grey <b>34</b> melon <b>38</b> noble red	<b>50</b> metal dark blue <b>53</b> metal light grey <b>57</b> metal dark grey <b>58</b> metal bordeaux

<b>3 A</b>	<b>T</b>	<input type="checkbox"/>	+	<input type="checkbox"/>	+	<b>1 C</b>	<input type="checkbox"/>	+	<input type="checkbox"/>	+	<b>2 A</b>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.		<b>LED</b>	<b>00</b> blue <b>20</b> green <b>40</b> yellow <b>80</b> red		<b>Cap</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black	<b>Lens</b>	<b>1</b> transparent <b>2</b> green <b>4</b> yellow <b>8</b> red	<b>Bezel</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black

<b>3 A</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 B</b>	<input type="checkbox"/>	+	<b>2 B</b>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.		<b>Cap</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black		<b>Bezel</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black	<b>Lens</b>	<b>1</b> transparent <b>2</b> green <b>4</b> yellow <b>6</b> frosted white <b>8</b> red

+	<b>2 B X X X</b>	<input type="checkbox"/>
	<b>LED for 2B bezel</b>	<b>20</b> green <b>40</b> yellow <b>80</b> red

Keycaps and bezels shown on this page can also be used on  
illume™ switch 4A - see page 9. Part nos. for bezels for 4A are 2C and 2D.

进口贴片轻触开关价格查询全国统一热线 4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

Ordering example: 3ATL640 + 1C094 + 2A04

# multimec® 3A + 1A/1H/1M/1ZA

## Technical Data

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



Dimensions (through-hole) 1A	Dimensions (w/LED) 1H	Dimensions (SMD) 1ZA	Dimensions (SMD) 1M
<p>PCB layout</p>	<p>PCB layout (top view)</p>	<p>PCB layout</p>	<p>PCB layout</p>

## How to order

<b>3 A</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 A</b>	<input type="checkbox"/>	<b>00</b> blue	<b>30*</b> ultra blue	<b>50*</b> metal dark blue
Switch	<b>Mounting</b>	<b>L 6</b> low temp.		Cap	<b>02</b> green	<b>40*</b> dusty blue	<b>53*</b> metal light grey	
	<b>T</b> through-hole	<b>H 9</b> high temp.			<b>03*</b> grey	<b>42*</b> aqua blue	<b>57*</b> metal dark grey	
	<b>S</b> surface mount			<b>1 Z A</b>	<b>04</b> yellow	<b>32</b> mint green	<b>58*</b> metal bordeaux	
				Cap	<b>06*</b> white	<b>33</b> tele grey		
					<b>08</b> red	<b>34</b> melon		
					<b>09*</b> black	<b>38</b> noble red	<b>*) Colours for 1ZA</b>	

<b>3 A</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 M</b>	<input type="checkbox"/>	<b>00</b> blue
Switch	<b>Mounting</b>	<b>L 6</b> low temp.		Cap	<b>02</b> green	<b>03</b> grey
	<b>T</b> through-hole	<b>H 9</b> high temp.			<b>04</b> yellow	<b>06</b> white
	<b>S</b> surface mount				<b>08</b> red	<b>09</b> black

<b>3 A</b>	<b>T</b>	<input type="checkbox"/>	+	<b>1 H</b>	<input type="checkbox"/>	<b>00</b> blue	<b>Lens</b>
Switch	<b>Mounting</b>	<b>L 6</b> low temp.		Cap	<b>02</b> green	<b>03</b> grey	<b>1</b> transparent
	<b>T</b> through-hole	<b>H 9</b> high temp.			<b>04</b> yellow	<b>06</b> white	<b>2</b> green
					<b>08</b> red	<b>09</b> black	<b>4</b> yellow
							<b>6</b> frosted white
							<b>8</b> red

Keycaps shown on this page can also be used on

illume™ switch 4A - see page 9

进口贴片轻触开关价格查询全国统一热线

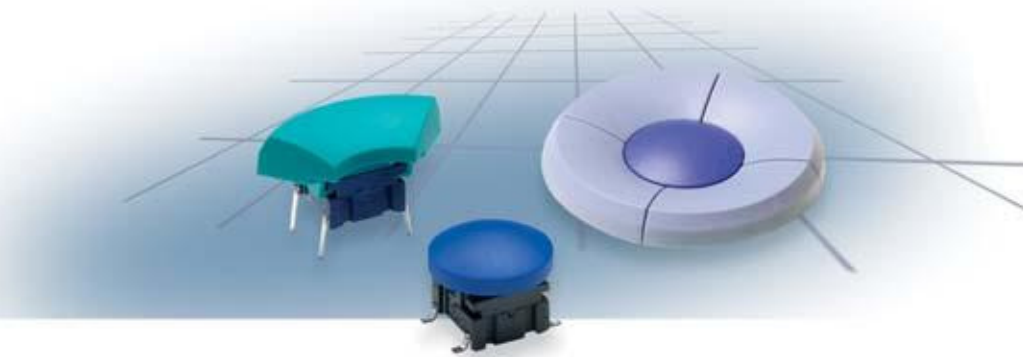
4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

Ordering example: 3ATL680 + 1H098

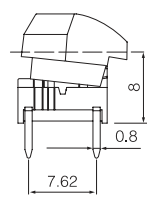
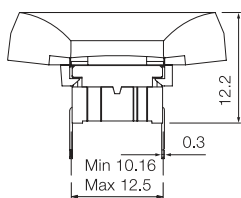
# multimec<sup>®</sup> Navimec™

## Technical Data

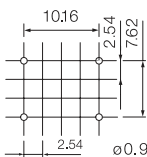
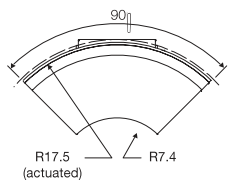
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



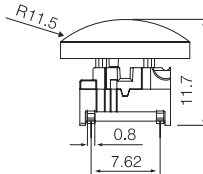
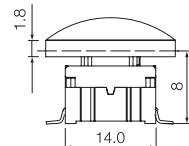
### Dimensions 1ZB (through-hole)



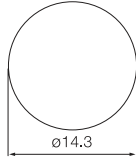
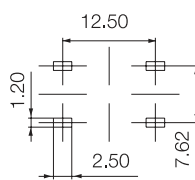
#### PCB layout



### Dimensions 1ZC (SMD)



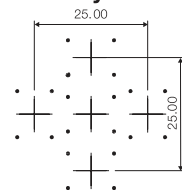
#### PCB layout



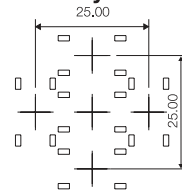
### Recommended panel cut-out:

ø35.0-35.5 Depending on application

### PCB layout TH



### PCB layout SMD



## How to order

**3 A**

Switch



Mounting

T through-hole  
S surface mount



L 6 low temp.  
H 9 high temp.



Cap 1ZB



03 grey

06 white

09 black

30 ultra blue

40 dusty blue

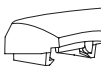
42 aqua blue

50 metal dark blue

53 metal light grey

57 metal dark grey

58 metal bordeaux



**3 F**

Switch



Mounting

T through-hole  
S surface mount



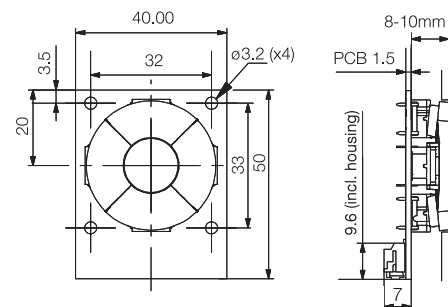
L 6 low temp.  
H 9 high temp.



Cap 1ZC

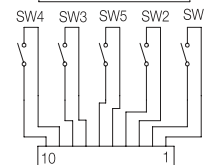
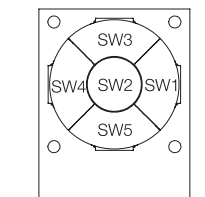


### Dimensions Navimec™ Module



Dimensions (mm)

### Circuit Diagram Navimec™ Module (Front side View)



The plug on the Navimec™ module is JST SMT S10B-PH-SM3-TB or similar. We recommend using Cable socket: JST PHR-10 or similar Contact: JST SPH-002T-PO.5S or similar.

## Navimec™ Module

Part No. 9508000

Navimec™ Module excl. keycaps

Part No. 950XXYY

Navimec™ Module incl. keycaps

Part No. 9509XXXYYY

Navimec™ Module incl. keycaps with legends

The module can be delivered with keycaps (4 x 1ZB and 1 x 1ZC) in solid colours or black keycaps with white legends.

For module incl. keycaps in solid colours (950XXYY) please indicate colour code for 1ZBXX and colour code for 1ZCYY.

For module incl. keycaps with legends (9509XXXYYY) please indicate legends for 1ZBXXX and legends for 1ZCYYY. All Caps are black with white legends. Please see legends available on page 23.

**Examples:** Module with 5 switches (4x3ATL6+1x3FTL6) mounted with 4x1ZB30 ultra blue and 1x1ZC42 aqua blue = 9503042.

Module with 5 switches (4x3ATL6+1x3FTL6) mounted with 4x1ZB09XD136 (legend arrow) and 1x1ZC09118 (legend OK) = 9509136118.

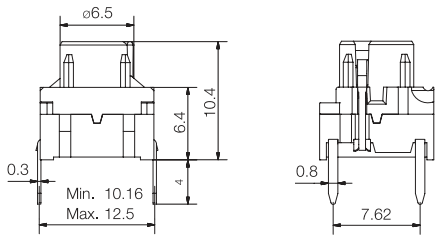
# multimec<sup>®</sup> illumec™ 4F

## Technical Data

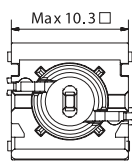
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
high temp. switch; -40/+160°C  
LED: -30/+85°C



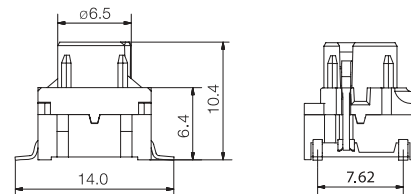
### Dimensions (through-hole)



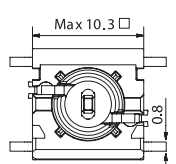
### Top View



### Dimensions (SMD)

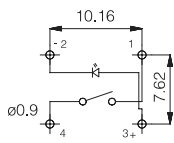


### Top View

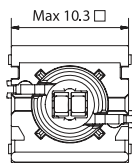
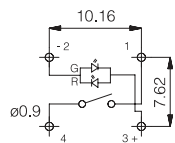


### PCB layout and Circuit Diagram

#### 1 LED

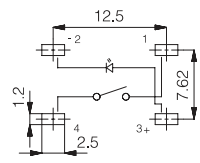


#### 2 LEDS

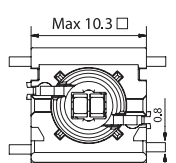
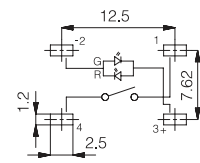


### PCB layout and Circuit Diagram

#### 1 LED



#### 2 LEDS



Technical specifications for 4F switch and LEDs see pages 35 and 36

## How to order

<b>4 F</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	+	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>1D</b>
<b>Switch</b>	<b>Mounting</b>	<b>LED</b>	<b>Illuminated</b>	<b>Cap</b>					<b>1K,1KB,1KC</b>
	<b>SH9</b> surface mount	<b>01</b> blue							<b>1N</b>
	<b>TH9</b> through-hole	<b>22</b> green							<b>1S</b>
		<b>42</b> yellow							<b>1T</b>
		<b>61</b> white							<b>1U</b>
		<b>82</b> red							<b>1V</b>
		<b>2242</b> green/yellow							<b>1WA,1WD,1WP</b>
		<b>8222</b> red/green							<b>1X</b>
		<b>8242</b> red/yellow							

## Colour code

<b>11,16</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>11,16</b>	<b>Cap</b>	<b>Solid Colour</b>	<b>Illuminated Lens</b>
<b>10,12,14,16,18</b>		<b>1E Solid Colour + lens</b>	<b>1,2,4,6,8</b>
<b>11</b>		<b>1F Solid Colour + lens</b>	<b>1,2,4,6,8</b>
<b>16</b>		<b>1Q Solid Colour + lens</b>	<b>1,6</b>
<b>16</b>		<b>1R Solid Colour + lens</b>	<b>1,6</b>
<b>16</b>			
<b>16</b>			
<b>11</b>			

## Colour codes

<b>LEDs</b>	<b>Illuminated Caps</b>
<b>01</b> blue	<b>10</b> frosted blue
<b>22</b> green	<b>11</b> transparent
<b>42</b> yellow	<b>12</b> frosted green
<b>61</b> white	<b>14</b> frosted yellow
<b>82</b> red	<b>16</b> frosted white
<b>2242</b> green/yellow	<b>18</b> frosted red
<b>8222</b> red/green	
<b>8242</b> red/yellow	

## Solid Colours

<b>1E,1F</b>	<b>1Q,1R</b>
<b>00</b> blue	<b>00</b> blue
<b>02</b> green	<b>03</b> grey
<b>03</b> grey	<b>08</b> red
<b>04</b> yellow	<b>09</b> black
<b>06</b> white	
<b>08</b> red	
<b>09</b> black	

## Dimensions

<b>Caps</b>	<b>See Page</b>
<b>1D,1E,1F</b>	<b>15</b>
<b>1K,1KB,1KC</b>	<b>16</b>
<b>1N</b>	<b>14</b>
<b>1Q,1R</b>	<b>18</b>
<b>1S</b>	<b>21</b>
<b>1T,1U,1V</b>	<b>19</b>
<b>1WA,1WD,1WP</b>	<b>17</b>
<b>1X</b>	<b>20</b>



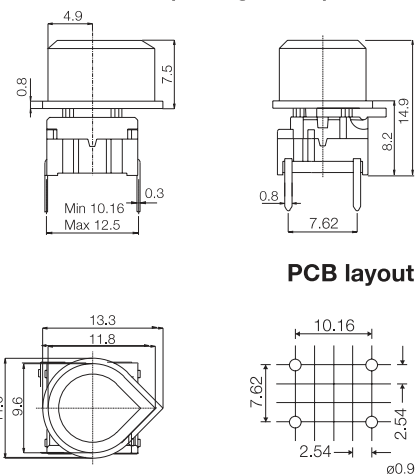
# multimec® 3F + 1N

## Technical Data

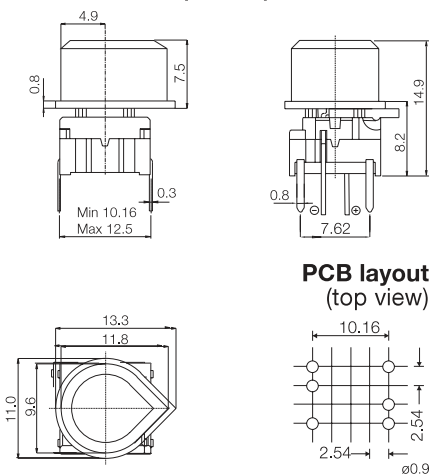
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



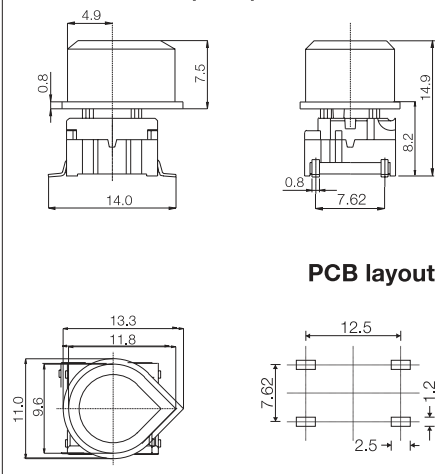
### Dimensions (through-hole)



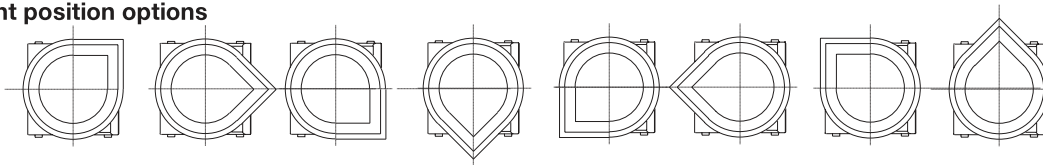
### Dimensions (w/LED)



### Dimensions (SMD)



### 8 different position options



### How to order

**3 F**
**Switch**

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

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

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


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

**3 F**
**Switch**

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

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

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

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


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

Keycaps shown on this page can also be used on

illumec™ switch 4F - see page 13

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4006-022-002 北京 上海 深圳 无锡 天津 www.omrons.com.cn

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

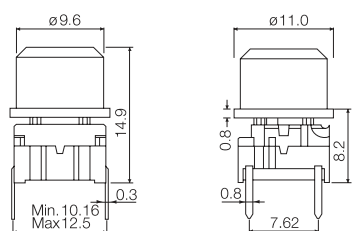
# multimec® 3F + 1D/1E/1F

## Technical Data

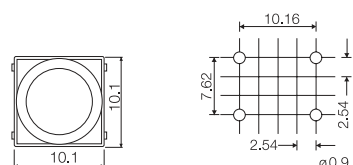
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



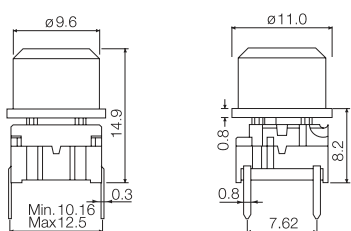
### Dimensions (through-hole)



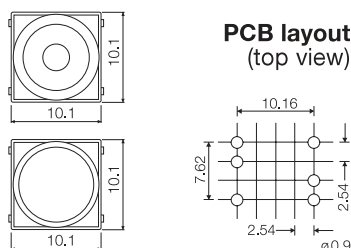
### PCB layout



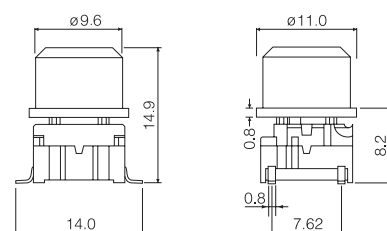
### Dimensions (w/LED)



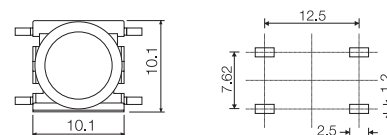
### PCB layout (top view)



### Dimensions (SMD)



### PCB layout



## How to order

**3 F**

Switch

**T**

Mounting

T through-hole  
S surface mount

**L**

L 6 low temp.  
H 9 high temp.

**1 D**

Cap



**00**

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

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

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

**3 F**

Switch

**T**

Mounting

T through-hole

**L**

L 6 low temp.  
H 9 high temp.

**LED**

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

**Cap 1D**



**Cap 1E**



**Cap 1F**



**11**

11 transparent  
16 frosted white

**Lens**

1 transparent  
2 green  
4 yellow  
6 frosted white  
8 red

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

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Ordering example: 3FTL620 + 1E032

4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

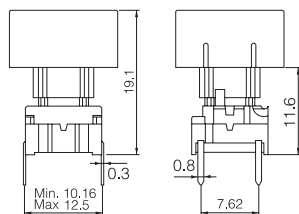
# multimec® 3F + 1K/1KB/1KC

## Technical Data

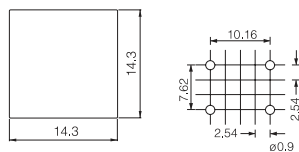
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



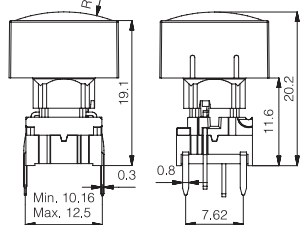
### Dimensions 1K (through-hole)



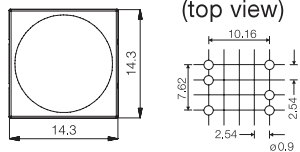
#### PCB layout



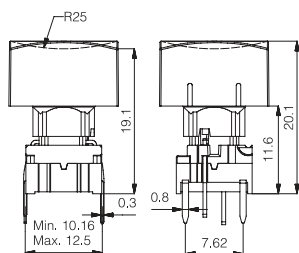
### Dimensions 1KB (w/LED)



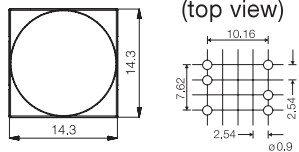
#### PCB layout (top view)



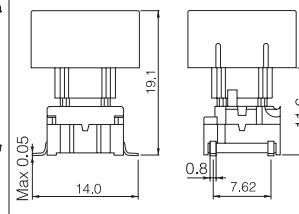
### Dimensions 1KC (w/LED)



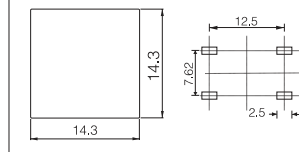
#### PCB layout (top view)



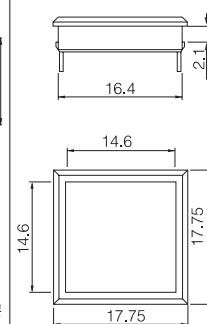
### Dimensions 1K (SMD)



#### PCB layout



### Dimensions (Bezel) (Optional)



## How to order

<b>3 F</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 K</b>	<b>1 6</b>	+	<b>2 K</b>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.		<b>Cap</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black		<b>Bezel</b>	<b>03</b> grey <b>06</b> white <b>08</b> red <b>09</b> black

<b>3 F</b>	<b>T</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<input type="checkbox"/>	<b>1 1 1 6</b>	+	<b>2 K</b>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.	<b>LED</b>		<b>Cap</b>	<b>frosted white</b>		<b>Bezel</b>	<b>03</b> grey <b>06</b> white <b>08</b> red <b>09</b> black
			<b>23</b> green <b>45</b> yellow <b>88</b> red			<b>1K</b>			
						<b>1KB</b>			
						<b>1KC</b>			

The 1K caps consist of a transparent lid and a diffuser lens.  
It is possible to make your own customized legend by placing a foil between the lid and the lens.

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

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4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

Ordering example: 3FTL688 + 1K1116



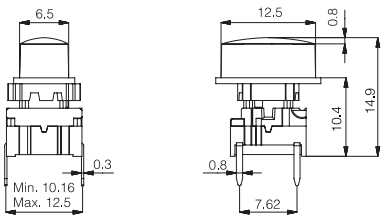
# multimec® 3F + 1WA/1WD/1WP

## Technical Data

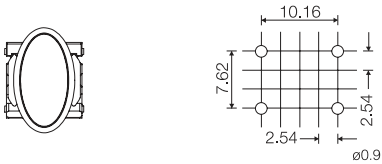
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



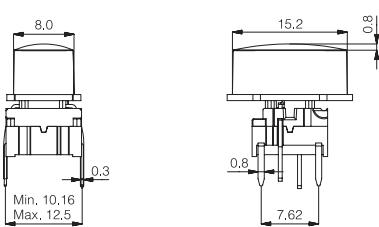
### Dimensions (through-hole) 1WA



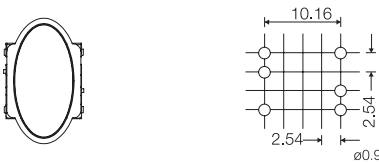
#### PCB layout



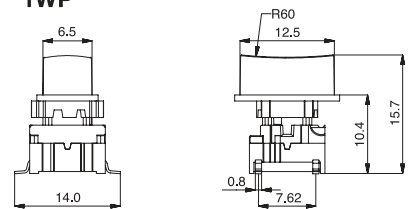
### Dimensions (w/LED) 1WD



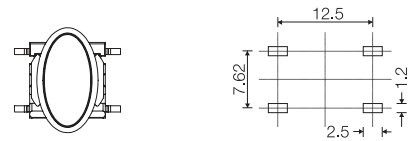
#### PCB layout (top view)



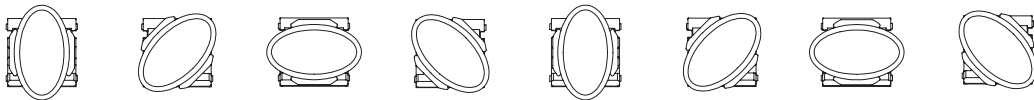
### Dimensions (SMD) 1WP



#### PCB layout



### 8 different position options



### How to order

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

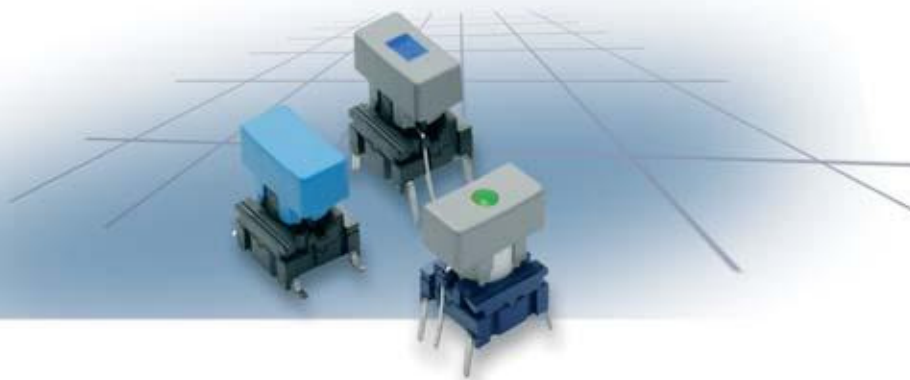
<b>3 F</b>	<b>T</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<input type="checkbox"/>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.	<b>LED</b>		<b>Cap</b>	<b>16</b> frosted white
	<b>T</b> through-hole		<b>23</b> green <b>45</b> yellow <b>88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

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

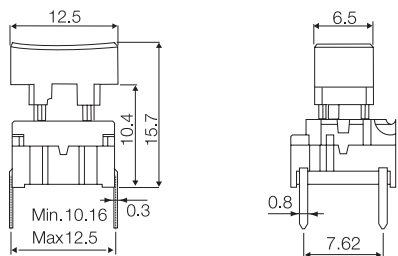
# multimec® 3F + 1P/1Q/1R

## Technical Data

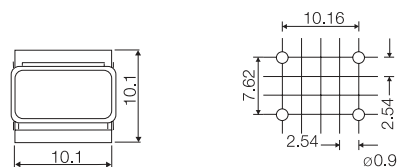
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



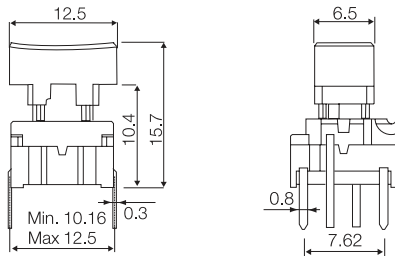
### Dimensions (through-hole)



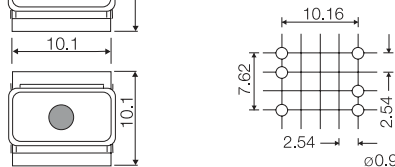
### PCB layout



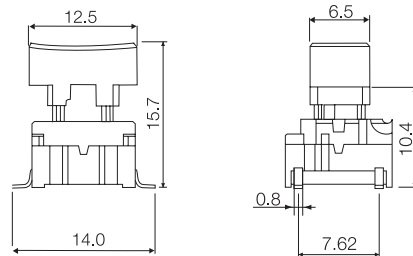
### Dimensions (w/LED)



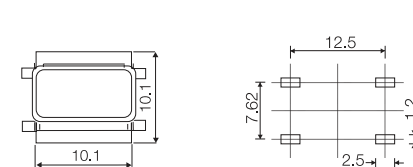
### PCB layout (top view)



### Dimensions (SMD)



### PCB layout



## How to order

**3 F**
**Switch**

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

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

**+**
**1 P**
**Cap**

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

**3 F**
**Switch**

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

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

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

**+**

**1Q**

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

**Lens**
**1** transparent  
**6** frosted white

Keycaps shown on this page can also be used on

illumec™ switch 4F - see page 13

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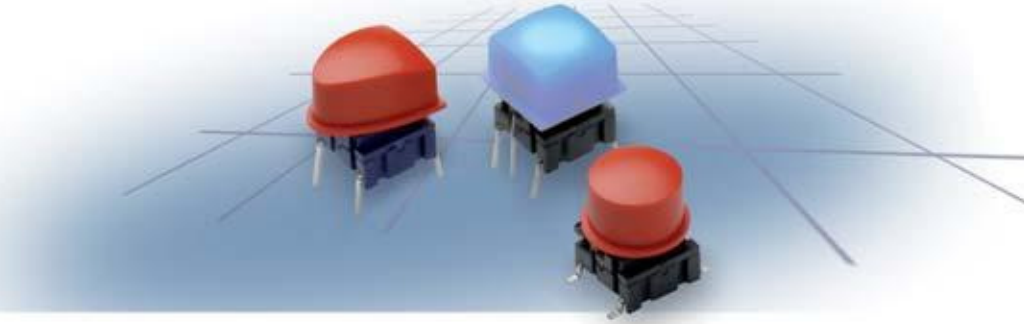
4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

Ordering example: 3FTL680 + 1Q091

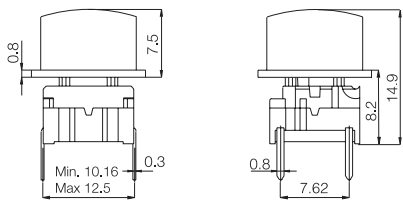
# multimec® 3F + 1T/1U/1V

## Technical Data

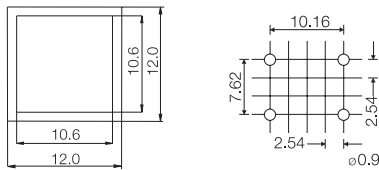
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



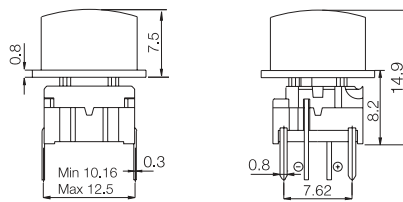
### Dimensions (through-hole)



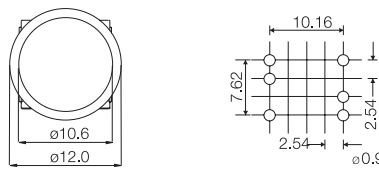
### PCB layout



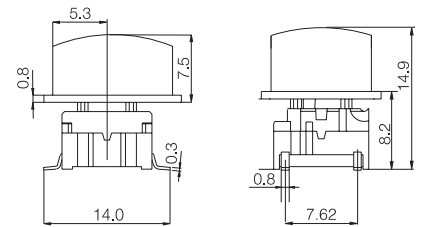
### Dimensions (w/LED)



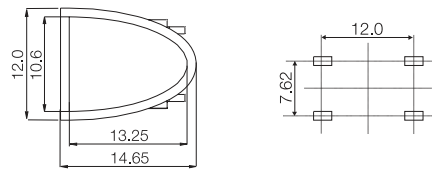
### PCB layout (top view)



### Dimensions (SMD)



### PCB layout



## How to order

**3 F**

Switch

Mounting

T through-hole  
S surface mount

L 6 low temp.  
H 9 high temp.

+

Cap

1T

1U

1V

00 blue  
03 grey  
08 red  
09 black

**3 F**

Switch

**T**

Mounting

T through-hole

L 6 low temp.  
H 9 high temp.

LED

23 green  
45 yellow  
88 red

+

Cap

1T

1U

1V

**1 6**

frosted white

Keycaps shown on this page can also be used on

illume™ switch 4F - see page 13

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4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

Ordering example: 3FTL645 + 1V16

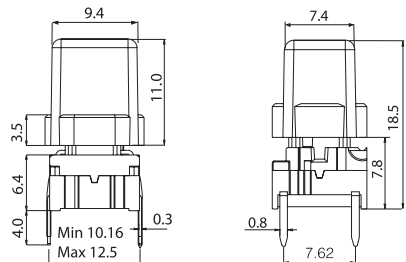
# multimec® 3F + 1X

## Technical Data

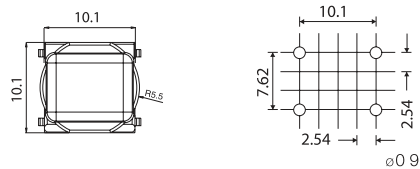
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



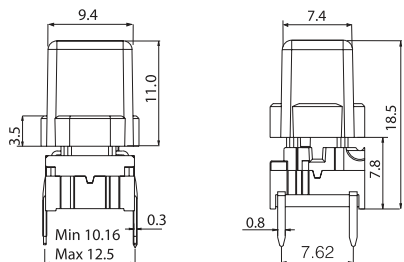
### Dimensions (through-hole)



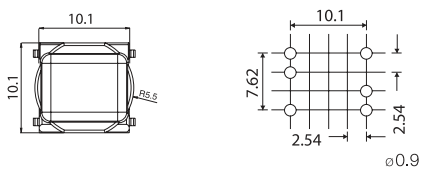
### PCB layout



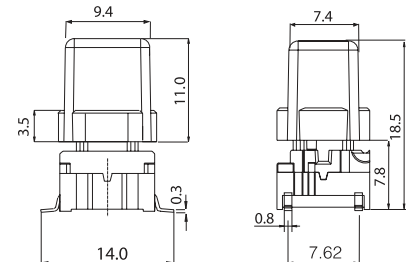
### Dimensions (w/LED)



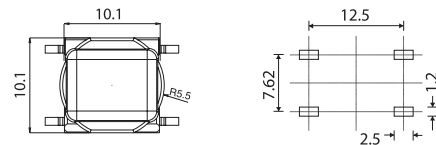
### PCB layout (top view)



### Dimensions (SMD)



### PCB layout



## How to order

<b>3 F</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 X</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.		<b>Cap</b>	<b>00</b> blue <b>02</b> green <b>03</b> grey <b>04</b> yellow <b>06</b> white <b>08</b> red <b>09</b> black	<b>30</b> ultra blue <b>40</b> dusty blue <b>42</b> aqua blue <b>32</b> mint green <b>33</b> tele grey <b>34</b> melon <b>38</b> noble red	<b>50</b> metal dark blue <b>53</b> metal light grey <b>57</b> metal dark grey <b>58</b> metal bordeaux

<b>3 F</b>	<b>T</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 X</b>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. <b>H 9</b> high temp.	<b>LED</b>		<b>Cap</b>	<b>11</b> transparent <b>16</b> frosted white
	<b>T</b> through-hole		<b>00</b> blue <b>20</b> green <b>40</b> yellow <b>60</b> white <b>80</b> red <b>2040</b> green/yellow <b>8020</b> red/green <b>8040</b> red/yellow			

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

进口贴片轻触开关价格查询全国统一热线

4006-022-002 北京 上海 深圳 无锡 天津 www.omrons.com.cn

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

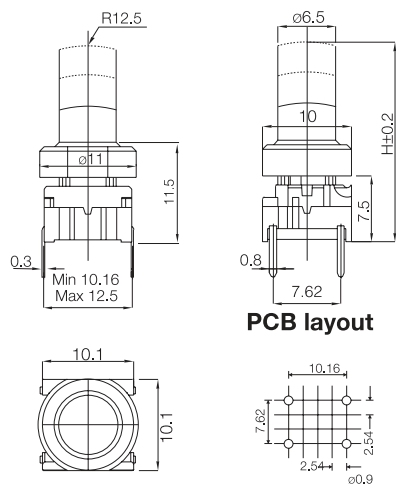
# multimec® 3F + 1S + 2S

## Technical Data

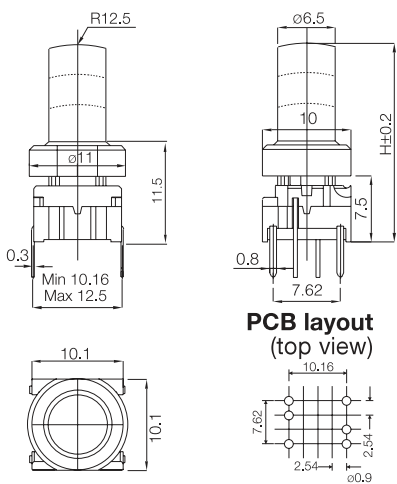
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



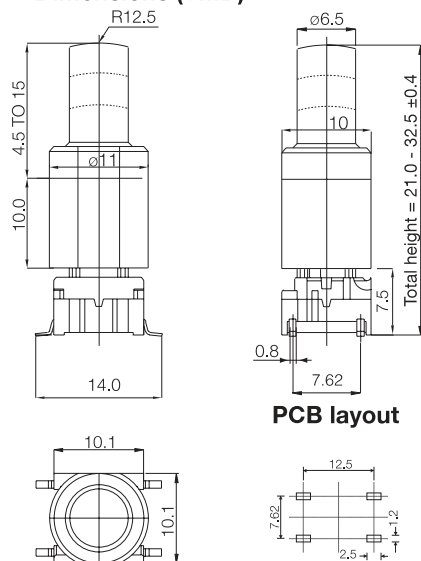
### Dimensions (through-hole)



### Dimensions (w/LED)



### Dimensions (SMD)



## How to order

<b>3 F</b>	<input type="checkbox"/>	<input type="checkbox"/>	+	<b>1 S 0 9 -</b>	<input type="checkbox"/>	.	<input type="checkbox"/>	+	<b>2 S 0 9 -</b>	<input type="checkbox"/>	.	<input type="checkbox"/>
Switch	Mounting	L 6 low temp.		Cap black	Height	Extender black	Height					
	T through-hole	H 9 high temp.			16.0		05.0 (Optional)					
	S surface mount				19.0		06.0 Adds 5-10mm to total height					
					22.5		07.0					
							08.0					
							09.0					
							10.0					

<b>3 F</b>	<b>T</b>	<input type="checkbox"/>	+	<input type="checkbox"/>	<input type="checkbox"/>	.	<input type="checkbox"/>	+	<b>1 S 1 1 -</b>	<input type="checkbox"/>	.	<input type="checkbox"/>
Switch	Mounting	L 6 low temp.		LED	Cap Transparent	Height						
	T through-hole	H 9 high temp.		00 blue		16.0						
				20 green		19.0						
				40 yellow		22.5						
				60 white								
				80 red								
				2040 green/yellow								
				8020 red/green								
				8040 red/yellow								

### Customised Heights:

3F+1S is available in any height from 12.0 to 24 mm.  
 3F+1S+2S is available in any height from 17.0 to 34 mm.  
 Min. height for 1S11 is 16.0 and for 1S09 min height is 12.0 mm.  
 Min. order qty. for custom heights is 2.000 pcs.  
 For heights less than 12.0 mm, please refer to 3E switch range.

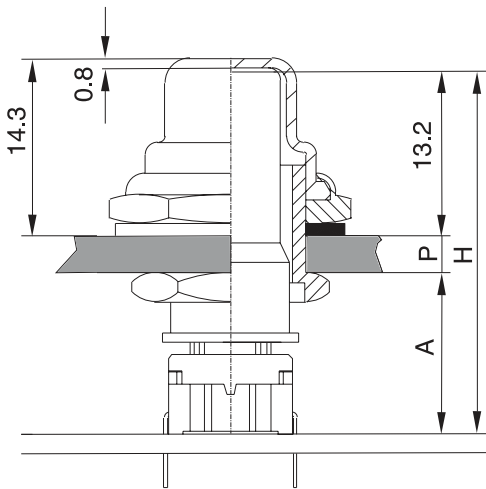
Keycaps shown on this page can also be used on  
**illumec™ switch 4F - see page 13**



# multimec® Aquamec™

## Specifications switches: Specifications Sealing Boot:

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C
- Operating temperature:  
-40/+85°C
- IP67 sealing
- sealing life time:  
2.000.000 operations
- material: silicone



$$H = A + P + 13.2$$

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






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

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




The dimension H is the overall height of the switch+cap.  
Bushing AQN-0.5 accepts panel thickness (P) 0.5-2.5 mm.  
Bushing AQN-2.5 accepts panel thickness (P) 2.5-4.0 mm.  
Panel cut out  $\varnothing$  12.0  $\pm$  0.2.

## How to order

**3 F**    + **AQN** -   + **AQC**   -   + **AQB01**

**Switch** **Mounting** **L 6** low temp. **Bushing** **Panel** **Cap** **Overall Height** **Sealing boot, incl. sealing ring**  
**T** through-hole **H 9** high temp.  0.5 **09** black 24.2 **09** black  
**S** surface mount  2.5 **11** transparent 25.2 **11** transparent  
 26.2  
 27.2 

**3 F** **T**   + **AQN** -   + **AQC**   -   + **AQB01**

**Switch** **Mounting** **L 6** low temp. **LED** **Bushing** **Panel** **Cap** **Overall Height** **Sealing boot, incl. sealing ring**  
**T** through-hole **H 9** high temp. **00** blue  0.5 **11** transparent 24.2 **11** transparent  
**20** green  2.5 **25.2**  
**40** yellow **26.2**  
**60** white **27.2**  
**80** red  
**2040** green/yellow  
**8020** red/green  
**8040** red/yellow 

Keycaps shown on this page can also be used on

illume™ switch 4F - see page 13

进口贴片轻触开关价格查询全国统一热线 4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

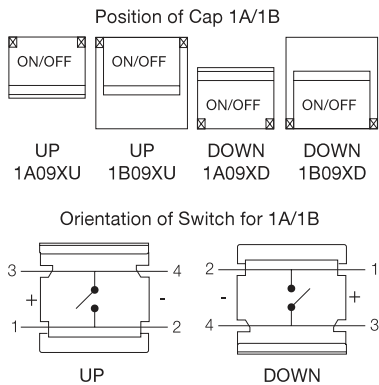
Ordering example: AQB0109 + AQC09-27.2 + AQN-2.5 + 3FTL6

# multimec® Legends



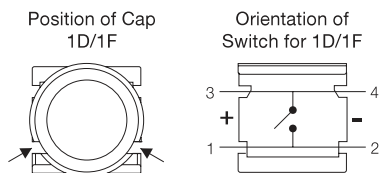
All standard legends are white on black caps.  
The size of the legends listed may not correspond to the actual size.  
Please ask your local distributor, if you do not find what you need on the list. New legends may have been added after this catalogue was printed.  
Custom legends and other colour combinations are available, please contact your local distributor.

**Note!**



For 1A/1B the orientation shown above is standard.

**Please consider the switch orientation you require before specifying legend orientation.**



For the 1D and 1F caps the orientation shown above is standard.

**Please consider the switch orientation you require before specifying legend orientation.**

## Standard Keycap Legends

LEGEND	1A09XU_	1A09XD_	1B09XU_	1B09XD_	1D09_	1F096_	1ZB09XD_	1ZC09_
0	000	000	000	000	000	000		
1	001	001	001	001	001	001		
2	002	002	002	002	002	002		
3	003	003	003	003	003	003		
4	004	004	004	004	004	004		
5	005	005	005	005	005	005		
6	006	006	006	006	006	006		
7	007	007	007	007	007	007		
8	008	008	008	008	008	008		
9	009	009	009	009	009	009		
A	010	010	010	010				
B	011	011	011	011				
C	012	012	012	012				
D	013	013	013	013				
#	107	107	107	107	107	107		
*	019	019	019	019	019	019		
☐	016	016	016	016				
→	033	033	033	033	033			
←	133	133	133	133	133			
↑	034	034	034	034	034			
↓	134	134	134	134	134			
↖	135	135	135	135	135	135		
+	054	054	054	054				
-	059	059	059	059				
•	056	056	056	056				
▲							136	
⏻	123	123	123	123	123	123		123*
START	031	031	031	031				
CLEAR	036	036	036	036				
LOAD	037	037	037	037				
RESET	038	038	038	038				038
CANCEL	048	048	048	048				
ENTER								105
OK								118
SET								119
MENU								120
FUNC								121
HOME								122

## Applications with mec switches

### Studio Equipment



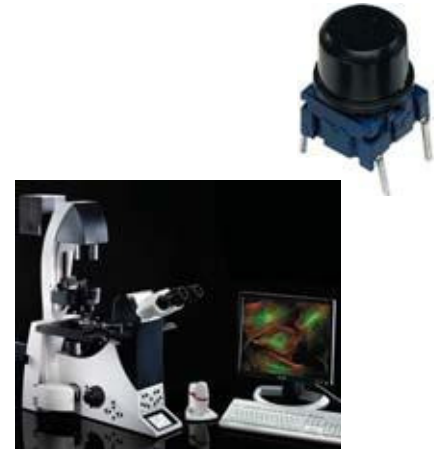
Navimec, 3A+1ZA

### Security Access Control



Navimec, 3A+1B+2A, 3A+1A

### Digital Microscope



3F+1D

### Barcode Reader



3C in-moulded

### Pump Control Unit



3E

### Space Shuttle Internal Communication



Unimec 15501+16300+16310

### Control for Video Camera in Police Cars



3A+1A, 1H

### Conference Systems



3F+1ZA, 1ZC 3A+1H, 1M

### Door Entry Control



3F+1T, 1U, 1V, 1F



# Applications with mec switches

## Police Speed Control



3F+1D, 1T, 1V

## Control Panel for Boats



3F+1U

## Scooter for Disabled People



3F+1D

## Defibrillator



3C under foil

## Tree Felling Equipment



3E

## Flight Simulators



3F+1P

3F+1P,1D

## Military Handheld Computer



3C

## Car Operation Panel for Disabled People



3F+1ZA, 1ZC

Navimec, 3F+1ZC

## Mixing Console



3F+1K,1E

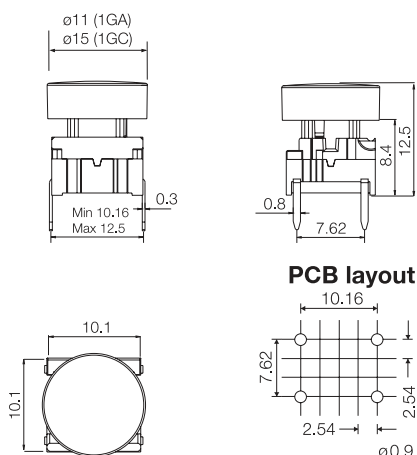
# multimec® 3F + 1GA/1GC

## Technical Data

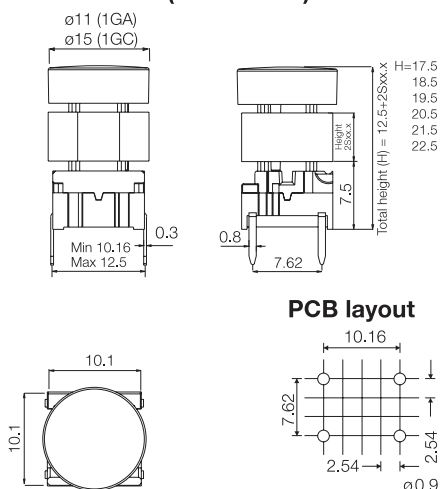
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C  
high temp: -40/+160°C



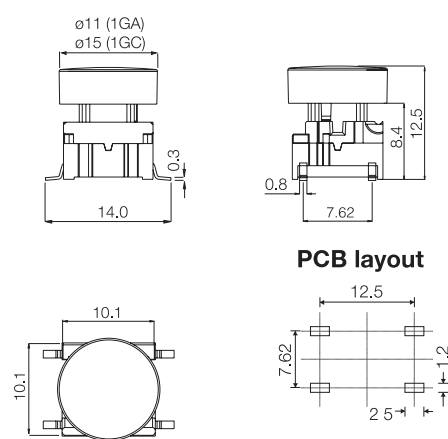
## Dimensions (through-hole)



## Dimensions (w/extender)



## Dimensions (SMD)



## How to order

**3 F**
**Switch**

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

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

+

**1 G A 0 9**
**Cap black**

**1 G C 0 9**
**Cap black**


+

**2 S 0 9 - . 0**
**Extender black**

 (Optional)  
Adds 5-10 mm  
to total height.

**Height**  
05.0  
06.0  
07.0  
08.0  
09.0  
10.0

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

H = Overall height

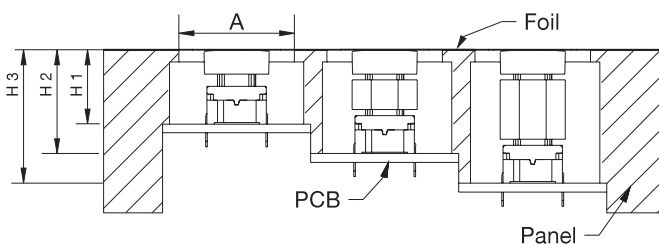
Overall heights below 12.5 mm - Please see Multimec® versions 3C and 3E.

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

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

Switch travel = 1 mm.

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





# multimec® 3C/3E

## Technical Data

- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:
  - low temp: -40/+115°C
  - high temp: -40/+160°C
- actuator:
  - in PPS: -40/+160°C
  - in polycarbonate: -40/+85°C



Standard 3C		Variable heights 3E	
Dimensions (through-hole)	Dimensions (SMD)	Dimensions (through-hole)	Dimensions (SMD)
<p>Min. 10.16 Max 12.5</p>	<p>14.0</p>	<p>Min. 10.16 Max 12.5</p>	<p>14.0</p>
PCB layout	PCB layout	PCB layout	PCB layout
<p>10.16, 7.62, 2.54, 10.1, 10.1, 0.9</p>	<p>12.5, 2.5, 1.2, 10.1, 10.1, 7.62</p>	<p>10.16, 7.62, 2.54, 10.1, 10.1, 0.9</p>	<p>12.5, 2.5, 1.2, 10.1, 10.1, 7.62</p>

## How to order

<b>3 C</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L 6</b> low temp. white
	<b>T</b> through-hole	<b>L 9</b> low temp. black
	<b>S</b> surface mount	<b>H 9</b> high temp.

<b>3 E</b>	<input type="checkbox"/>	<input type="checkbox"/>	<b>9</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L</b> low temp.	<b>9</b>	<b>-</b>			<b>Standard overall height</b>
	<b>T</b> through-hole	<b>H</b> high temp.	Black				<b>08.0</b>
	<b>S</b> surface mount		Actuator made of PPS				<b>09.5</b>
							<b>10.4</b>
							<b>11.0</b>
							<b>12.0</b>
							<b>15.0</b>

## Custom heights:

3E is available in any height from 08.0 to 15.0mm.  
Min. order qty. for custom heights is 2.000 pcs.

<b>3 E</b>	<b>T</b>	<b>L</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Switch</b>	<b>Mounting</b>	<b>L</b> low temp.	<b>20</b> blue	<b>-</b>			<b>Standard overall height</b>
	<b>T</b> through-hole		<b>23</b> grey				<b>08.0</b>
			<b>24</b> yellow				<b>09.5</b>
			<b>28</b> red				<b>10.4</b>
			<b>29</b> black				<b>11.0</b>
			Actuator made of polycarbonate				<b>12.0</b>
							<b>15.0</b>

Switch and 3E actuator can be delivered unassembled.

The actuators made of polycarbonate can also be used for high temperature switches, however they must be mounted after soldering and the temp. range will be reduced to 85°C.

进口贴片轻触开关价格查询全国统一热线 4006-022-002 北京 上海 深圳 无锡 天津 www.omfons.com.cn

Ordering example: 3CTL6 and 3ETL9-09.5 or 3ETL23-08.0

# varimec™

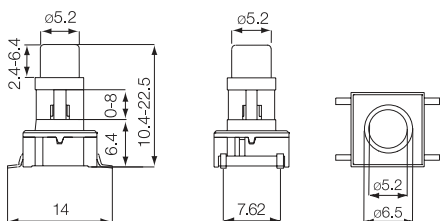
## double variability

### Technical Data

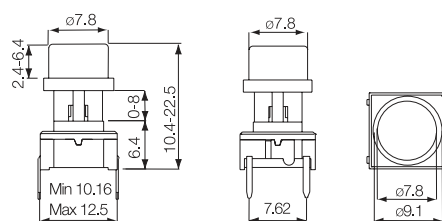
- through-hole or SMD
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range switch:  
low temp: -40/+115°C  
high temp: -40/+160 °C
- temperature range cap:  
-40/+160 °C



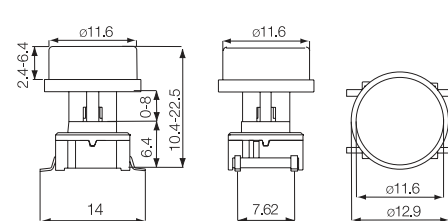
### Round ø5.2



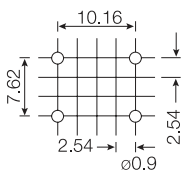
### Round ø7.8



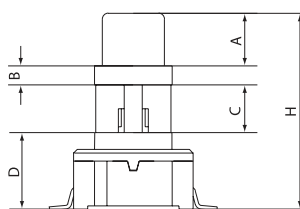
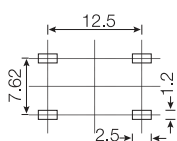
### Round ø11.6



### PCB Layout (through-hole)



### PCB Layout (SMD)



### The Concept

- H** = Overall heights from 10.4-22.5
  - A** = Variable height from 2.4 to 6.4  
**A** cannot exceed **H** - 8.0
  - B** = Fixed recess 1.6
  - D** = Fixed switch 6.4
  - C** = Variable from 0-8.1
  - C = H - A - B - D**
- All measurements in mm

### How to order



Switch

**3ETL**  
**3ESH**  
**3ETH**



Shape and Size

**A** 5.2 Round  
**E** 7.8 Round  
**K** 11.6 Round



Colour Codes

**60** blue  
**63** grey  
**64** yellow  
**68** red  
**69** black



Overall Height  
**H**

**A** 10.4  
**B** 11.0  
**C** 12.0  
**D** 12.5  
**E** 13.0  
**F** 14.0  
**G** 15.0  
**H** 16.0  
**J** 19.0  
**K** 22.5



Height above recess  
**A**

**A** 2.4  
**B** 3.0  
**C** 3.5  
**D** 4.0  
**E** 4.5  
**F** 5.0  
**G** 5.6  
**H** 6.4



Tape\*

**R**

### Cap alone:

Instead of part no. for switch please use 3E- and then same as above

### Examples Switch and Cap:

3ETLE64CC = Switch 3ETL, 7.8 Round Cap, Yellow, Overall Height 12.0, Height above recess 3.5, (Height under recess 0.5).

### Example Cap Alone:

3E-E63FF = Cap, 7.8 Round, Grey, Overall Height with switch 14.0, Height above recess 5.0, (Height under recess 1.0).

Min. order is 2,000 pcs. per shape, size and heights for parts mentioned above.

For heights not mentioned in the list a start-up fee will apply.

\*Only overall height up to 12.5mm can be supplied on tape.



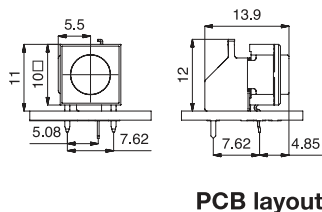
# multimec® Right Angle Switches

## Technical Data

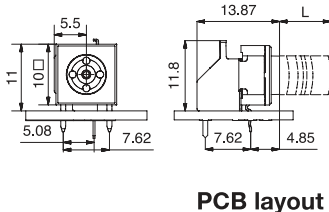
- through-hole only
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C



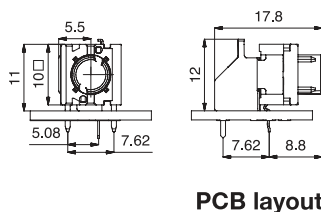
### Dimensions 3CTRAS



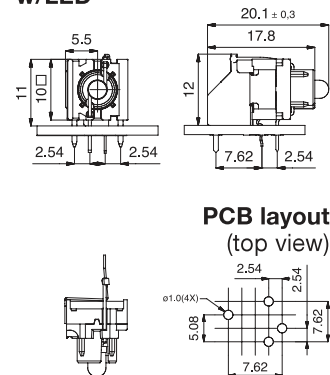
### Dimensions 3ETRAS



### Dimensions 3FTRAS



### Dimensions 3FTRAS w/LED



## How to order

**3** **T** **L 6** **R A S**  
**Switch** **Mounting** **L 6** low temp. **Right angle support**  
**3C** **T** through-hole  
**3F**

3FTL6RAS - for caps 1D-1K-1P-1S see page 31

**3 E** **T** **L** **9 20 23 24 28 29** **R A S**  
**Switch** **Mounting** **L** low temp. **Actuator made of PPS** **Actuator height**  
**T** through-hole **9** black **20** blue **23** grey **24** yellow **28** red **29** black } **Two digit colour code means actuators made of polycarbonate**  
 Switch and 3E actuator can be delivered unassembled.

**3 F** **T** **L 6** **00 20 40 60 80 2040 8020 8040** **R A S**  
**Switch** **Mounting** **L 6** low temp. **LED** **Right angle support**  
**T** through-hole **00** blue **20** green **40** yellow **60** white **80** red **2040** green/yellow **8020** red/green **8040** red/yellow  
 3FTL6RAS w/LED can be used with the keycaps:  
 1D, 1E, 1F, 1K, 1N, 1Q, 1R, 1S, 1T, 1U, 1V, 1WA, 1WD, 1WP, 1X  
 Ask for drawings/dimensions for these keycaps with 3FTL6RAS w/LED

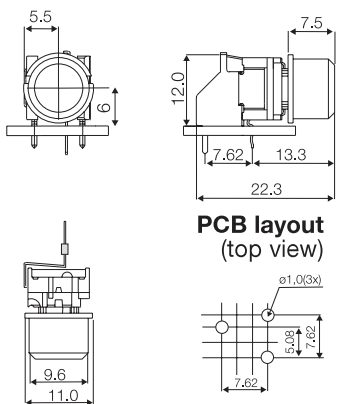
# multimec® RAS + 1D/1K/1P/1S

## Technical Data

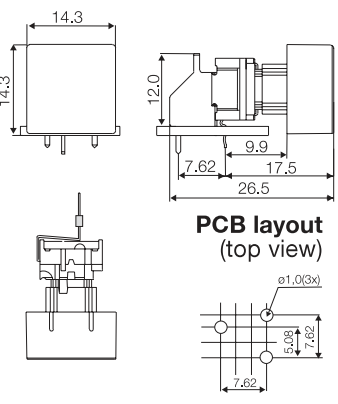
- through-hole only
- 50mA/24VDC
- single pole/momentary
- 10.000.000 operations life time
- IP67 sealing
- temperature range:  
low temp: -40/+115°C



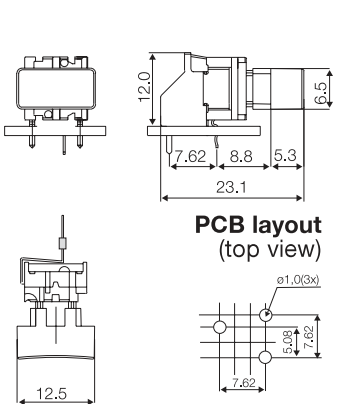
### Dimensions 1D



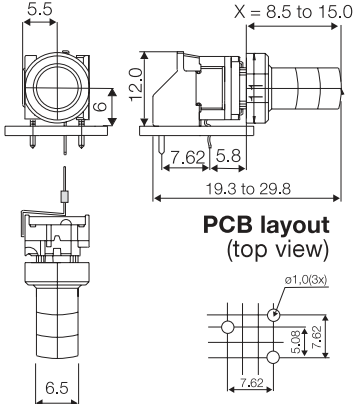
### Dimensions 1K



### Dimensions 1P



### Dimensions 1S



## How to order

**3 F**

Switch

**T**

Mounting  
T through-hole

**L 6**

L 6 low temp.

**R A S**

Right angle support

+

**1 D**

Cap



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

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

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

**1 P**

Cap



- 00 blue
- 03 grey
- 08 red
- 09 black

**1 K 1 6**

Cap



- 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

Other keycaps such as 1GA, 1GC, 1N, 1T, 1U, 1V, 1WA, 1WD, 1WP and 1X can be used on 3FTL6RAS. It may require reducing the size of the PCB to the front side of the switch body to avoid the cap touching the PCB. Ask for drawings/dimensions for these keycaps with 3FTL6RAS.

Please also see 3FTL6RAS with LED on page 30.

\*Any cap height X from 8.5 to 15.0 mm is available.  
Please order 1S09-H, where H = X+7.5 mm

**1 S 0 9 - . . .**

Cap black



- H 16.0
- 19.0
- 22.5

- X \* 8.5
- 11.5
- 15.0

Min. order quantity for custom heights is 2.000 pcs.  
**进口贴片轻触开关价格查询全国统一热线**  
Ordering example: 3FTL6RAS+1K0016 + 2K03



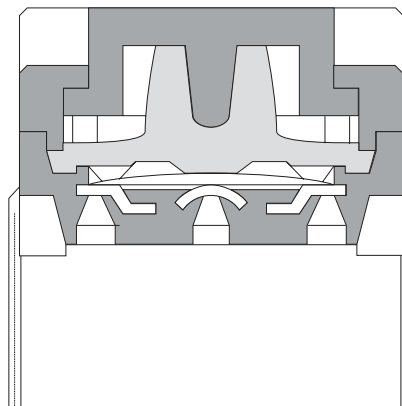
# multimec® basic switch modules

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

Surface Mount Versions				illumec™ Through-hole Versions		illumec™ Surface Mount Versions	
3A	3C	3E	3F	4AT w/LEDs	4FT w/LEDs	4AS w/LEDs	4FS w/LEDs
For 1A/1B/1M/1ZA/1ZB		For 3E actuators/Varimec	For 1D/1K/1N/1P/1S/1T/1U/1V/1WA/1WD/1WP/1X/1ZC/1GA/1GC	For 1C/1H	For 1D/1E/1F/1K/1KB/1KC/1N/1Q/1R/1S/1T/1U/1V/1WA/1WD/1WP/1X	For 1C/1H	For 1D/1E/1F/1K/1KB/1KC/1N/1Q/1R/1S/1T/1U/1V/1WA/1WD/1WP/1X
<b>Standard Versions</b>				<b>Standard Versions</b>			
3ASH9/3ASH9R	3CSH9/3CSH9R	3ESH9/3ESH9R	3FSH9/3FSH9R	4ATH901/22/42/61/82/ 2242/8222/8242	4FTH901/22/42/61/82/ 2242/8222/8242	4ASH901/22/42/61/82/ 2242/8222/8242	4FSH901/22/42/61/82/ 2242/8222/8242
Co-planarity = ≤ 0.05							

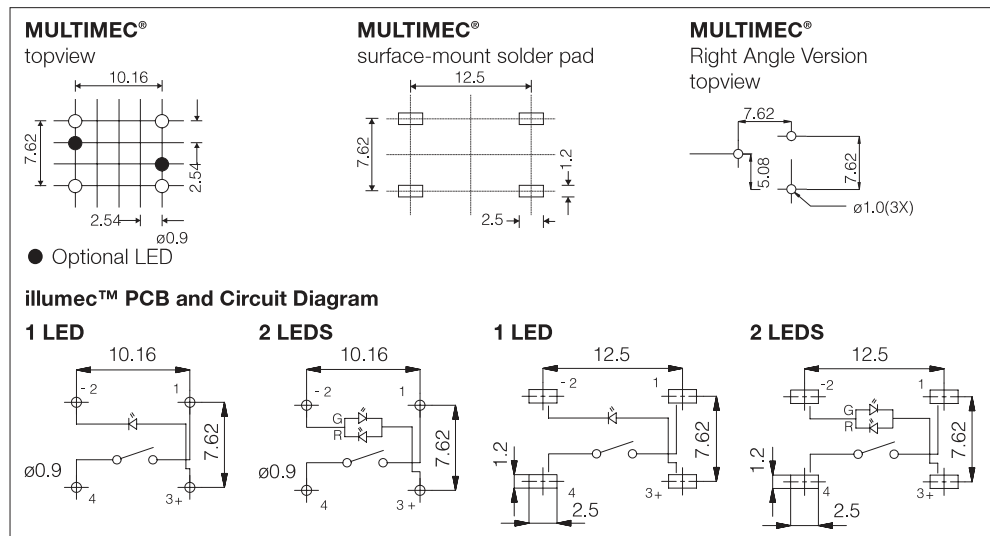
Right Angle Versions			
3C	3E	3F	3F w/LED
	For 3E actuators/Varimec	For 1D/1K/1N/1P/1S/1T/1U/1V/1W/1WA/1WD/1WP/1X/1ZC/1GA/1GC	For 1D/1E/1F/1N/1Q/1R/1S/1X
<b>Standard Versions</b>			
3CTL6RAS	3ETXX-X.XRAS	3FTL6RAS	3FTL600/20/40/60/80/ 2040/8020/8040RAS

## multimec® Cross Section

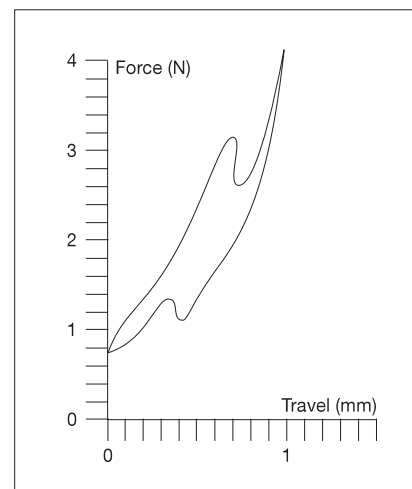



# multimec® basic switches and tape & reel

## Recommended PCB layout



## Operating Force (typical example)

Tape and reel is available for the parts listed and has the following specifications:

**Reel diameter**  $\phi 330\text{mm}$   
**Tape width** 24mm  
**Pitch** see list  
**Tape and reel material** antistatic or better  
**Quantity per reel** see list

### 3A/3C/3E/3F multimec® tape & reel

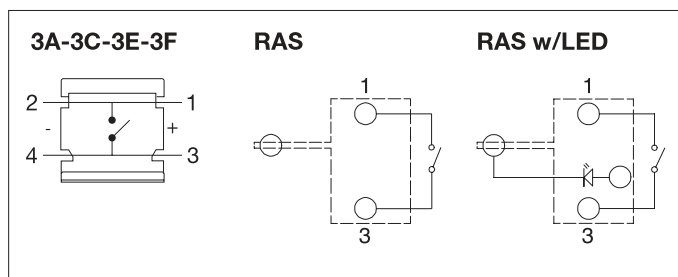
Part No.	Ordering Code	Pitch	Quantity per reel
3ASH9	3ASH9R	16	500
3CSH9	3CSH9R	16	500
3ESH9	3ESH9R	16	500
3ESH9-08.0	3ESH9R08.0	20	250
3ESH9-09.5	3ESH9R09.5	20	250
3ESH9-10.4	3ESH9R10.4	20	250
3ESH9-11.0	3ESH9R11.0	20	250
3ESH9-12.0	3ESH9R12.0	20	250
All varimec below 12.5	R after the part no.	20	250
3FSH9	3FSH9R	20	250

### 4F illumecc™ tape & reel

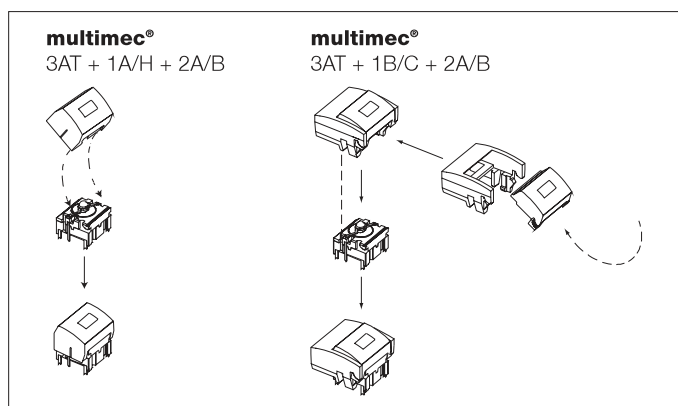
Part No.	Ordering Code	Pitch	Quantity per reel
4FSH901	4FSH901R	20	250
4FSH922	4FSH922R	20	250
4FSH942	4FSH942R	20	250
4FSH961	4FSH961R	20	250
4FSH982	4FSH982R	20	250
4FSH92242	4FSH92242R	20	250
4FSH98222	4FSH98222R	20	250
4FSH98242	4FSH98242R	20	250

Specifications are according to EIA 600481-3 and IEC 60286-3

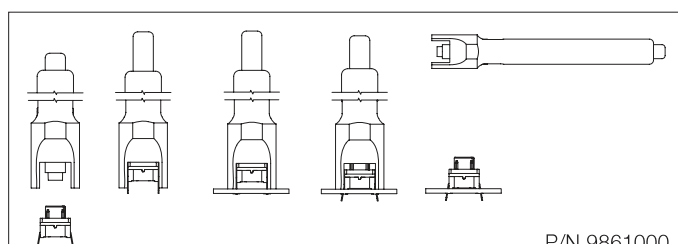
## Circuit Diagram



## How to Assemble



## Mounting Tool for Through-hole versions

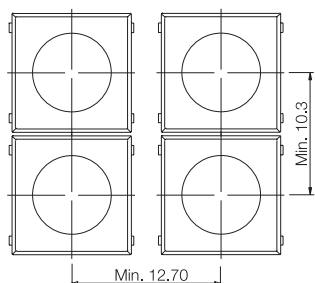


P/N 9861000

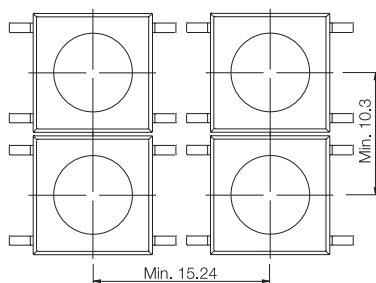
# multimec® spacing

## Basic switch spacing

### through-hole

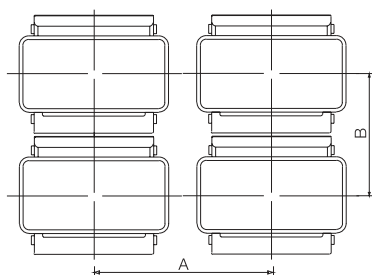


### surface-mount

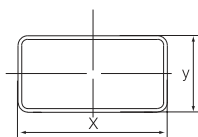


## Recommended switch/cap spacing

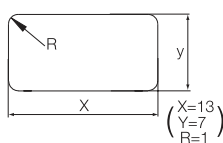
### Switch spacing



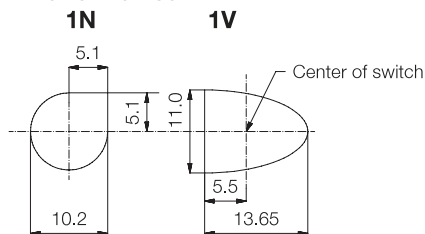
### Cap dimension



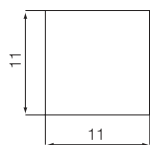
### Panel cut-out



### Panel Cut-out



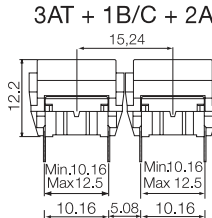
### 1T



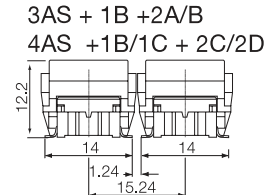
Spacing in mm

## Spacing examples

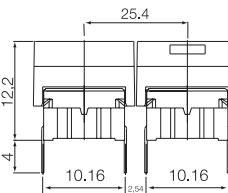
### multimec® 3AT + 1B/C + 2A/B



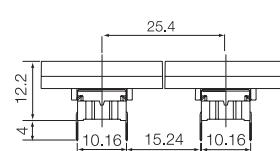
### multimec® 3AS + 1B + 2A/B 4AS + 1B/1C + 2C/2D



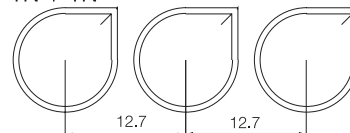
### multimec® 3AT + 1A/H



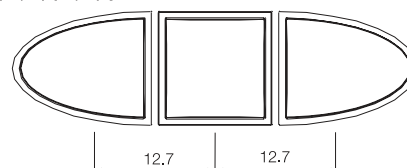
### multimec® 3AT + 1M



### multimec® 1N + 1N + 1N



### multimec® 1V + 1T + 1V



Cap series	Recommended* min. switch spacing AxB	Nominal cap dimension W x H	Recommended min. panel cut-out
1A	12.7 x 10.16	12.6 x 10.1	13.0 x 10.5
1B/1C+2A/2B	15.24 x 15.24	15.1 x 15.1	15.5 x 15.5
1D/1E/1F	12.7 x 12.7	ø9.6	ø10.0
1K	15.24 x 15.24	14.3 x 14.3	14.7 x 14.7
1M	25.4 x 10.16	25.0 x 10.1	25.7 x 10.5
1N	12.7 x 12.7	ø9.8/□4.9	ø10.2/□5.1
1P/1Q/1R	15.24 x 10.16	6.5 x 12.5	7.0 x 13.0, R Max. 1.0
1S	12.7 x 10.16	ø6.5	ø7.0
1T	12.7 x 12.7	10.6 x 10.6	11.0 x 11.0
1U	12.7 x 12.7	ø10.6	ø11.0
1V (pointing outwards)	12.7 x 12.7	10.6 x 13.25	11.0 x 13.65
1X	12.7 x 12.7	9.4 x 7.4	9.8 x 7.9

\*A dimension with surface mount version is min. 15.24. Depending on manufacturing technology it may be necessary either to reduce pad dimension, or to increase spacing.

进口贴片轻触开关价格查询全国统一热线: 4006-022-062 北京 上海 深圳 无锡 天津 [www.mec.com.cn](http://www.mec.com.cn)  
In all applications the total assembly tolerance must be considered by the user (board tolerance, front panel, assembly accuracy). It is required enough room for a free movement in the final product. The specifications on this page are to be considered as an aid only. MEC cannot be held responsible for the final assembly.

# multimec® technical specifications

## RoHS Compatible

	3A-3C-3E-3F Low Temperature Versions		3A-3C-3E-3F High Temperature Versions		illumec™ 4A - 4F High Temperature Versions	
	Silver	Gold	Silver	Gold	Silver	Gold
<b>Electrical Specifications</b>						
Contact resistance	<30m Ω - typ. 10m Ω		<30m Ω - typ. 10m Ω		<30m Ω - typ. 10 m Ω	
Insulation resistance	>10M Ω		>10M Ω		>10M Ω	
Recommended load	0.5-50mA 24VDC	0.5μ-50mA 24VDC	0.5-50mA 24VDC	0.5μ-50mA 24VDC	0.5-50mA 24VDC	0.5μ-50mA 24VDC
Contact bounce	<2mS - typically 0.5mS		<2mS - typically 0.5mS		<2mS - typically 0.5mS	
<b>Mechanical Specifications</b>						
Standard actuation force (switch)	3.0N typ.		3.0N typ.		3.0N typ.	
Max. actuation force without cap	100N for 10 sec.		100N for 10 sec.		100N for 10 sec.	
Key travel (switch)	1 mm		1 mm		1 mm	
Life time (switch)	>10.000.000 cycles		>10.000.000 cycles		>10.000.000 cycles	
<b>Temperature Range</b>						
Working temperature	Min. -40°C Max. +115°C		Min. -40°C Max. +160°C		Min. -30°C Max. +85°C*	
Storage temperature	Min. -40°C Max. +115°C		Min. -40°C Max. +160°C		Min. -30°C Max. +85°C*	
<b>Soldering IEC 68-2-20</b>	Wave - max. 260°C for max. 10 sec., please refer to usage guidelines. Soldering iron - max. 350°C for max. 3 sec. Flux tight.		Infrared, vapour phase, wave - max. 240°C for max. 40 sec. or max. 260°C for max. 30 sec. Soldering iron - max. 350°C for max. 3 sec. Flux tight.		Infrared, vapour phase, wave - max. 240°C for max. 40 sec. or max. 260°C for max. 30 sec. Soldering iron - max. 350°C for max. 3 sec. Flux tight.	
<b>Environmental Endurance IEC 68-2-3</b>						
Temperature	+40°C		+40°C		+40°C	
Humidity	93% RH		93% RH		93% RH	
Duration	56 Days		56 Days		56 Days	
<b>Temperature Cycling IEC 68-2-14</b>						
Temperature limit	Min. -40°C - Max. +125°C		Min. -40°C - Max. +125°C		Min. -40°C - Max. +125°C	
Number of cycles	10		10		10	
Exposure time at each temperature	30 min.		30 min.		30 min.	
Recovery time before measurements	16 hrs.		16 hrs.		16 hrs.	
Sealing IEC 529	IP-67		IP-67		IP-67	
Cleaning	Standard methods - see usage guidelines		Standard methods - see usage guidelines		Standard methods - see usage guidelines	
<b>Vibration Test IEC 68-2-6</b>						
Cycles					10	
Cycles time					2 hrs.	
<b>Material Specifications - Switches</b>						
Housing	PBT UL94VO		PPS UL94VO		PPS UL94VO	
Actuator	PBT UL94VO		PPS UL94VO		PPS UL94VO	
Sealing + spring	Silicone rubber		Silicone rubber		Silicone rubber	
Contact spring	Stainless steel + 3μAg	Stainless steel + 1μAu	Stainless steel + 3μAg	Stainless steel + 1μAu	Stainless steel + 3μAg	Stainless steel + 1μAu
Fixed contacts	SnCu + 2μNI + 3μAg	SnCu + 2μNI + 1μAu	SnCu + 2μNI + 3μAg	SnCu + 2μNI + 1μAu	SnCu + 2μNI + 3μAg	SnCu + 2μNI + 1μAu
Terminals	SnCu + 2μNI + 3μSn100	SnCu + 2μNI + 3μSn100	SnCu + 2μNI + 3μSn100	SnCu + 2μNI + 3μSn100	SnCu + 2μNI + 3μSn100	SnCu + 2μNI + 3μSn100
<b>Material Specifications - Caps &amp; Bezels</b>						
<b>Material</b>	<b>Parts</b>			<b>Temp limit</b>	<b>UL rating</b>	
ABS	1A, 1B, 1C, 1D, 1E, 1F, 1H, 1K, 1M, 1N, 1P, 1Q, 1R, 1T, 1U, 1V, 1WA, 1WD, 1WP, 1X, 1ZA, 1ZB, 1ZC.			Max. 65°C	UL94HB	
Polycarbonate	All lenses, 3E coloured actuators			Max. 85°C	UL94V1	
LCP	Black actuator of 3E			Max. 160°C	UL94VO	
PPS	1S, 2S			Max. 160°C	UL94VO	
Polyamide	Actuator of Varimec™, 1GA/1GC			Max. 160°C	UL94VO	
<b>Legends Adhesion</b>	ISO Class: 1/ASTM Class: 4B DIN EN ISO 2409					

\* LED max. working temperature

# multimec® LEDs

For 3A switches		3AXXX (for 1C/1H)				2BXXX		
Colour		B	G	Y	R	G	Y	R
Colour Codes		00	20	40	80	20	40	80
<b>Absolute Maximum Ratings</b> (Ta=25°C)								
Power	mW	105	100	60	100	75	60	60
Current forward	mA	30	30	20	30	20	20	20
Forward peak current	mA	150	120	80	120	60**	60**	60**
Voltage reverse	V	5	5	5	5	3	3	3
Operating temperature	°C	-40 - +85			-55 - +100			-25 - +85
Storage temperature	°C	-40 - +85			-55 - +100			-30 - +100
Soldering temperature	°C	260/5 sec.			260 for max. 3 sec.			260 for max. 5 sec.
<b>Electrical-Optical Characteristics</b> (Ta=25°C)								
Voltage forward	Typ. V	3.8	2.1*	2.1*	2.0*	2.1	2.1	2.0
	Max. V	4.5	2.8*	2.8*	2.8*	3.0	3.0	3.0
Current reverse (VR = 5V)	µA	10	100	100	100	10	10	10
Wave length	nm	466	565	585	630	563	585	650
Spread	Δnm	30	30	35	40	40	40	40
Spread angle	degree	40	90	90	90	45	45	45
<b>Luminous Intensity</b>	Min. mcd	4	0.7	1.7	1.1	9.0	5.6	5.6
	Typ. mcd	10	2.5	5.6	3.7	25	16	16
Orientation	The longer pin is the anode, the shorter is the cathode							

\*/f = 20mA, \*\*Pulse width 1ms Duty cycle 1:5

For 3F switches		3FXXX (for 1E-1F-1N-1Q-1R-1S-1X)						3FXXX (for 1K-1T-1U-1V-1W)					
Colour		B	G	Y	W	R	G/Y	R/G	R/Y	G	Y	R	
Colour Codes		00	20	40	60	80	2040	8020	8040	24	45	89	
<b>Absolute Maximum Ratings</b> (Ta=25°C)													
Power	mW	105	70	60	114	60	120	120	120	60	130	80	
Current forward	mA	30	20	20	30	20	25	25	25	25	40	30	
Forward peak current	mA	200	60**	60**	100	60**	150	150	150	100	500	1000	
Voltage reverse	V	5	3	3	5	3	5	5	5	5	12	12	
Operating temperature	°C	-25 - +85			-40 - +85		-25 - +85		-40 - +85		-40 - +85		-55 - +100
Storage temperature	°C	-30 - +100			-40 - +100		-30 - +100		-40 - +85		-40 - +100		-55 - +100
Soldering temperature	°C	260 for max. 5 sec.			260 for max. 2 sec.		260 for max. 5 sec.		260 for max. 2 sec.		260 for max. 5 sec.		
<b>Electrical-Optical Characteristics</b> (Ta=25°C)													
Voltage Forward	Typ. V	2.1	2.1	2.1	3.3	2.0	2.1	2.1	2.1	2.0*	2.3***	2.0***	
	Max. V	2.8	3.0	3.0	3.8	3.0	2.8	2.8	2.8	2.4*	2.5***	2.3***	
Current reverse (VR = 5V)	µA	2	10	10	0.01	10	2	2	2	10	10	10	
Wave length	nm	460	563	585	NA	650	565/590	625/565	625/590	573	587	633	
Spread	Δnm	40	40	40	NA	40	35	35	35	20	45	16	
Spread angle	degree	20	45	45	34	45	60	60	60	100	90	85	
<b>Luminous Intensity</b>	Min. mcd	20	9.0	5.6	280	5.6	8	8	8	10****	71****	180****	
	Typ. mcd	25	25	16	600	16	25	25	25	20****	112****	355****	
Orientation	The longer pin is the anode, the shorter is the cathode. For bicolor LEDs the anode for the first colour (ex. 2080) is the longer pin.												

\*\*/f = 50mA, \*\*\*\*Luminous Flux mlm

For 4A/4F switches		illume™ LEDs specifications				
Colour		B	G	Y	W	R
Colour Codes		01	22	42	61	82
<b>Absolute Maximum Ratings</b> (Ta=25°C)						
Power	mW	60	65	65	80	65
Current forward	mA	20	25	25	15	25
Forward peak current	mA	150	150	100	200	100
Voltage reverse	V	5	12	12	5	12
Operating temperature	°C	-30 - +85				
Storage temperature	°C	-30 - +85				
Soldering temperature	°C	245 for max. 10 sec.				
<b>Electrical-Optical Characteristics</b> (Ta=25°C)						
Voltage forward	Typ. V	3.35	2.2	2	3.05	2
	Max. V	3.5	2.5	2.5	3.2	2.5
Current reverse (VR = 5V)	µA	0.01	0.02	0.01	0.01	0.01
Wave length	nm	470	570	588	n.a.	633
Spread	Δnm	n.a.	30	16	n.a.	16
Spread angle	degree	145	160	160	138	160
<b>Luminous Intensity</b>	Min. mcd	30	28	112	28	112
	Typ. mcd	35	70	150	35	150
Optical Intensity	Lm/w	4			2.5	

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B= Blue, G= Green, Y= Yellow, R= Red, W= White, G/Y= Green/Yellow, R/G= Red/Green, R/Y= Red/Yellow

Specifications are subject to change without notice.



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MEC 开关图片 Apem 开关图片 IP67 防水开关防破坏开关防水轻触开关防水按键开关 Varimec 丹麦键 丹麦开关 MEC 轻触开关丹麦 MEC 开关 Illumec 开关带灯按键开关 Unimec 开关 丹麦 MEC 代理商 [www.omrons.com.cn](http://www.omrons.com.cn) [www.tuizer.com](http://www.tuizer.com)  
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Multimec®	关-瞬时	0.05A@24VDC	TACTILE SWITCH	顶部触 动	MEC Switches	SPST-NO
3ASH9	表面贴装	6.40mm	鸥翼型	不发光	-	-
3ATL6	通孔	6.40mm	PC 引脚	不发光	-	-
3ATL620	通孔	6.40mm	PC 引脚	发光	2.1 VDC	LED, 绿
3ATL640	通孔	6.40mm	PC 引脚	发光	2.1 VDC	LED, 黄
3ATL680	通孔	6.40mm	PC 引脚	发光	2 VDC	LED, 红
3ATL6Q	通孔	6.40mm	PC 引脚	不发光	-	-
3CSH9	表面贴装	6.40mm	鸥翼型	不发光	-	-
3CTL6	通孔	6.40mm	PC 引脚	不发光	-	-
3CTH9						
3CSL6						
3ESH9	表面贴装	-	鸥翼型	不发光	-	-
3ESH9-08.0	表面贴装	8.00mm	鸥翼型	不发光	-	-
3ESH9-09.5	表面贴装	9.50mm	鸥翼型	不发光	-	-
3ESH9-10.4	表面贴装	10.40mm	鸥翼型	不发光	-	-
3ESH9-12.0	表面贴装	12.00mm	鸥翼型	不发光	-	-
3ESH9-15.0	表面贴装	15.00mm	鸥翼型	不发光	-	-
3ETL6	通孔	-	PC 引脚	不发光	-	-
3ETL6-08.0	通孔	8.00mm	PC 引脚	不发光	-	-
3ETL6-09.5	通孔	9.50mm	PC 引脚	不发光	-	-
3ETL6-10.4	通孔	10.40mm	PC 引脚	不发光	-	-
3ETL6-12.0	通孔	12.00mm	PC 引脚	不发光	-	-
3ETL6-15.0	通孔	15.00mm	PC 引脚	不发光	-	-
3FSSH9	表面贴装	10.40mm	鸥翼型	不发光	-	-
3FTL6	通孔	10.40mm	PC 引脚	不发光	-	-
3FTL600	通孔	10.40mm	PC 引脚	发光	2.1 VDC	LED, 蓝
3FTL620	通孔	10.40mm	PC 引脚	发光	2.1 VDC	LED, 绿
3FTL624	通孔	10.40mm	PC 引脚	发光	2 VDC	LED, 绿
3FTL640	通孔	10.40mm	PC 引脚	发光	2.1 VDC	LED, 黄
3FTL645	通孔	10.40mm	PC 引脚	发光	2.3 VDC	LED, 黄
3FTL680	通孔	10.40mm	PC 引脚	发光	2 VDC	LED, 红
3FTL68020	通孔	10.40mm	PC 引脚	发光	2.0, 2.1 VDC	LED, 红/绿
3FTL689	通孔	10.40mm	PC 引脚	发光	-	LED, 红
3FTL6RAS	通孔, 直 角	10.40mm	PC 引脚	不发光	-	-

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4ASH9						
4ASH901	表面贴装	8.40mm	鸥翼型	发光	3.35 VDC	LED, 蓝
4ASH922	表面贴装	8.40mm	鸥翼型	发光	2.2 VDC	LED, 绿
4ASH942	表面贴装	8.40mm	鸥翼型	发光	2 VDC	LED, 黄
4ASH982	表面贴装	8.40mm	鸥翼型	发光	2 VDC	LED, 红
4ASH98222	表面贴装	8.40mm	鸥翼型	发光	2.0, 2.2 VDC	LED, 红/绿
4ATH9						
4ATH901	通孔	8.40mm	PC 引脚	发光	3.35 VDC	LED, 蓝
4ATH922	通孔	8.40mm	PC 引脚	发光	2.2 VDC	LED, 绿
4ATH942	通孔	8.40mm	PC 引脚	发光	2 VDC	LED, 黄
4ATH961	通孔	8.40mm	PC 引脚	发光	3.05 VDC	LED, 白
4ATH982	通孔	8.40mm	PC 引脚	发光	2 VDC	LED, 红
4ATH98222	通孔	8.40mm	PC 引脚	发光	2.0, 2.2 VDC	LED, 红/绿
4FSH9						
4FSH901	表面贴装	10.40mm	鸥翼型	发光	3.35 VDC	LED, 蓝
4FSH922	表面贴装	10.40mm	鸥翼型	发光	2.2 VDC	LED, 绿
4FSH942	表面贴装	10.40mm	鸥翼型	发光	2 VDC	LED, 黄
4FSH961	表面贴装	10.40mm	鸥翼型	发光	3.05 VDC	LED, 白
4FSH982	表面贴装	10.40mm	鸥翼型	发光	2 VDC	LED, 红
4FSH98222	表面贴装	10.40mm	鸥翼型	发光	2.0, 2.2 VDC	LED, 红/绿
4FTH9						
4FTH901	通孔	10.40mm	PC 引脚	发光	3.35 VDC	LED, 蓝
4FTH922	通孔	10.40mm	PC 引脚	发光	2.2 VDC	LED, 绿
4FTH942	通孔	10.40mm	PC 引脚	发光	2 VDC	LED, 黄
4FTH961	通孔	10.40mm	PC 引脚	发光	3.05 VDC	LED, 白
4FTH982	通孔	10.40mm	PC 引脚	发光	2 VDC	LED, 红
4FTH98222	通孔	10.40mm	PC 引脚	发光	2.0, 2.2 VDC	LED, 红/绿
5ESH9						
5ESH920	表面贴装	6.40mm	鸥翼型	不发光	-	-
5ESH935	表面贴装	6.40mm	鸥翼型	不发光	-	-
5ESH965	表面贴装	6.40mm	鸥翼型	不发光	-	-
5ETH9						
5ETH920	通孔	6.40mm	PC 引脚	不发光	-	-
5ETH935	通孔	6.40mm	PC 引脚	不发光	-	-
5ETH965	通孔	6.40mm	PC 引脚	不发光	-	-
5GSH9						
5GSH965						
5GSH93501	表面贴装	6.40mm	鸥翼型	发光	3.35 VDC	LED, 蓝
5GSH93522	表面贴装	6.40mm	鸥翼型	发光	2.2 VDC	LED, 绿
5GSH93542	表面贴装	6.40mm	鸥翼型	发光	2 VDC	LED, 黄
5GSH93561	表面贴装	6.40mm	鸥翼型	发光	3.05 VDC	LED, 白

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5GSH93582	表面贴装	6.40mm	鸥翼型	发光	2 VDC	LED, 红
5GSH9358222	表面贴装	6.40mm	鸥翼型	发光	2.0, 2.2 VDC	LED, 红/绿
5GTH9						
5GTH920	通孔	6.40mm	PC 引脚	不发光	-	-
5GTH935	通孔	6.40mm	PC 引脚	不发光	-	-
5GTH93501	通孔	6.40mm	PC 引脚	发光	3.35 VDC	LED, 蓝
5GTH93522	通孔	6.40mm	PC 引脚	发光	2.2 VDC	LED, 绿
5GTH93542	通孔	6.40mm	PC 引脚	发光	2 VDC	LED, 黄
5GTH93561	通孔	6.40mm	PC 引脚	发光	3.05 VDC	LED, 白
5GTH93582	通孔	6.40mm	PC 引脚	发光	2 VDC	LED, 红
5GTH9358222	通孔	6.40mm	PC 引脚	发光	2.0, 2.2 VDC	LED, 红/绿
5GTH965	通孔	6.40mm	PC 引脚	不发光	-	-