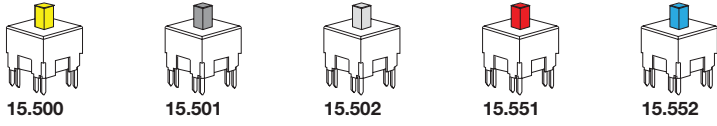
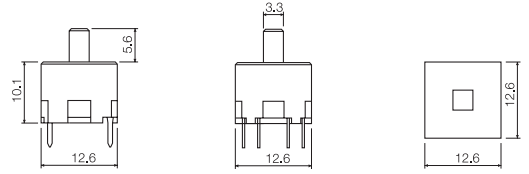
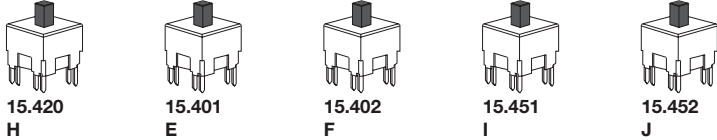


Basic module applies to all versions

Low temp.



High temp.



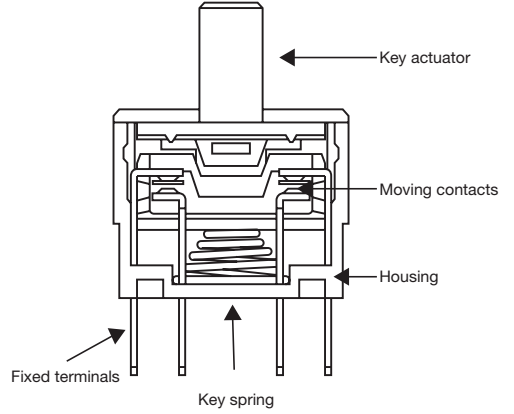
Part no:



Temperature:
 5: low temp.
 4: high temp.

Switch function:
 0: momentary
 5: alternate

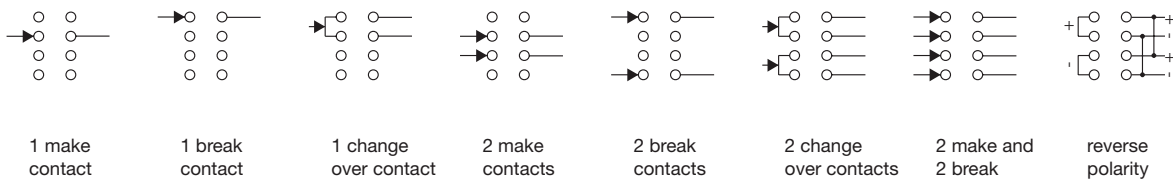
Terminal
 1: silver
 2: gold
 0: quiet version, silver



PCB Mounting Hole Dimensions Basic Switch	Circuit diagram (topview)	PCB Mounting Hole Dimensions (w/Extender 16250)	Functional diagram
	Without LED	With LED 16923 and 16924	— up - - - down

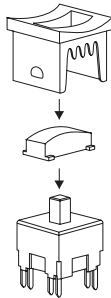
Wiring Diagram

Select the contact function you desire - and design your PC board accordingly

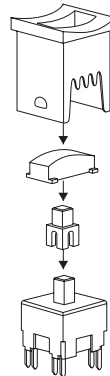


How to assemble

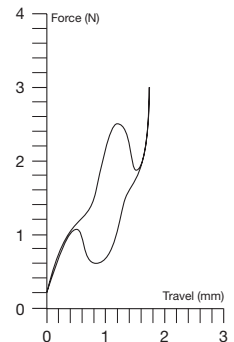
unimec™
 15XXX + 16300 +
 16310



unimec™
 15XXX + 16270 +
 16300 + 16324



Operating Force (Typical example)



RoHS Compatible

	RB Low Temperature Versions		RA High Temperature Versions	
	Silver	Gold	Silver	Gold
Electrical Specifications				
Contact resistance	Max. 100 m Ω (initially)		Max. 100 m Ω (initially)	
Insulation resistance	>10 M Ω		>10 M Ω	
Recommended load	Min. 0.5 mA	Min. 0.5 μA	Min. 0.5 mA	Min. 0.5 μA
	Max. 250 mA - 120 V - 9W AC - 6W DC		Max. 250 mA - 120 V - 9W AC - 6W DC	
Max. current in non switching state	0.5 A		0.5 A	
Contact bounce	Max. 10 ms		Max. 10 ms	
Dielectric strength between adjacent contacts	1000 V for 2 min.		1000 V for 2 min.	
Insulation resistance between adjacent contacts	5 X 10 ¹³ Ω		5 X 10 ¹³ Ω	
Capacitance between adjacent contacts	0.5 pF		0.5 pF	
Mechanical Specifications				
Standard actuation force (switch)	typ 2.5N		typ 2.5N	
Max. actuation force without cap	100N for 10 sec.		100N for 10 sec.	
Key travel (switch)	1.8 mm		1.8 mm	
Life time	Momentary 1.500.000 cycles Alternate 500.000 cycles		Momentary >10.000.000 cycles Alternate 5.000.000 cycles	
Temperature Range				
Working temperature	Min. -40°C Max. +75°C		Min. -40°C Max. +160°C	
Storage temperature	Min. -65°C Max. +85°C		Min. -65°C Max. +160°C	
Soldering IEC 68-2-20				
	Wave - max 260°C for max. 10 sec., please refer to usage guidelines Soldering iron - max. 350°C for max. 3 sec. Flux tight.			
Environmental Endurance IEC 68-2-3				
Temperature	+40°C		+40°C	
Humidity	93% RH		93% RH	
Duration	56 Days		56 Days	
Sealing IEC 529	IP-54		IP-54	
Cleaning	Standard methods such as water and soap (not immersed)			
Material Specifications - Switches				
Housing and actuator	Glass fiber filled Polycarbonate UL94V1		LCP UL94V0	
Switch spring	Stainless steel		Stainless steel	
Key spring	Stainless steel		Stainless steel	
Latch pin	Stainless steel		Stainless steel	
Fixed contact	SnCu + 2μNi + 3μAg	SnCu + 2μNi + 3μAu	SnCu + 2μNi + 3μAg	SnCu + 2μNi + 3μAu
Moving contact	Stainless steel + 3μAg	Stainless steel + 3μAg+1μAu	Stainless steel +3μAg	Stainless steel + 3μAg+1μAu
Terminals				
Contact lubricant	SnCu + 2μNi + 3μSn100		SnCu + 2μNi + 3μSn100	
	Special protective lubricant Klüber Barrierta I EL Fluid			
Material Specifications - All Caps & Bezels				
	ABS (standard) UL94HB			
Temperature limit	Max. +65°C		Max. +65°C	
Tampon Printing				
	According to ISO Class: 1/ASTM Class.: 4B		According to ISO Class: 1/ASTM Class.: 4B	

unimec™ LEDs

Part Nos.	16920/16921			16922			16923			16924			
	G	Y	R	G	Y	R	G	Y	R	G	Y	R	
Colour (G= Green, Y= Yellow, R= Red)	G	Y	R	G	Y	R	G	Y	R	G	Y	R	
Colour Codes	02	04	08	02	04	08	20	40	80	24	45	89	
Absolute Maximum Ratings (Ta=25°C)													
Power	mW	100	100	100	135	135	135	70	60	60	60	130	80
Current forward	mA	30	30	30	30	30	30	20	20	20	25	40	30
Forward peak current	mA	50	50	50	90	90	90	60**	60**	60**	100	500	100
Voltage reverse	V	5	5	5	5	5	5	3	3	3	5	12	5
Operating temperature	°C	-25 - +100			-55 - +100			-25 - +85			-40 - +85 -55 - +100		
Storage temperature	°C	-25 - +100			-55 - +100			-30 - +100			-40 - +85 -55 - +100		
Soldering temperature	°C	+245 for max. 3 sec.			+300 for max. 3 sec.			+260 for max. 5 sec.			+300 for max. 3 sec.		
Electrical-Optical Characteristics (Ta=25°C)													
Voltage Forward	Typ. V	2.0	2.0	2.0	2.1	2.2	2.3	2.1	2.1	2.0	2.0*	2.3***	2.0***
	Max. V	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.4*	2.5***	2.4***
Current reverse	μA	100	100	100	100	100	100	10	10	10	10	10	10
Wave length	nm	560	590	660	565	585	635	563	585	650	570	587	633
Spread	Ønm	10	10	10	10	10	10	40	40	40	10	45	16
Spread angle	degree	20	20	20	45	45	45	45	45	45	100	90	55
Luminous Intensity	Min. mcd	1	1	0.8	1.5	2.5	2.5	9.0	5.6	5.6	70****	71****	100****
	Typ. mcd	2	3	1.6	2.5	3.0	5.0	25	16	16	20****	112****	160****
Orientation	The longer pin is the anode, the shorter is the cathode.												

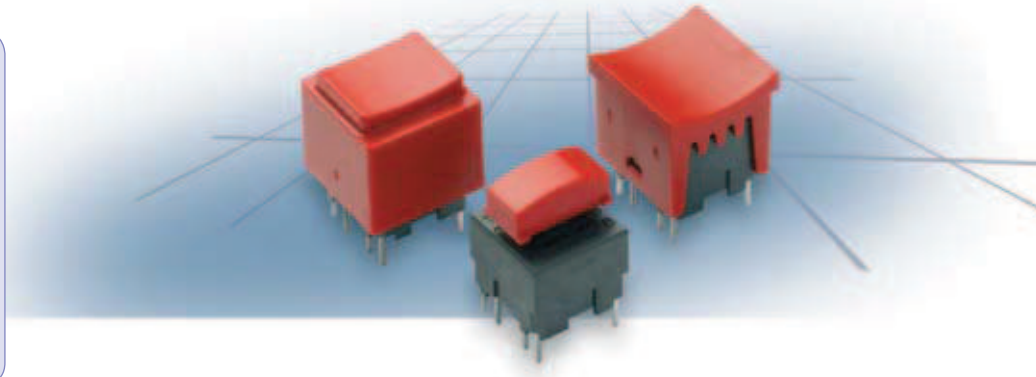
*If = 20mA, **Pulse width 1ms Duty cycle 1:5, ***If = 50mA, ****Luminous Flux mlm

Specifications are subject to change without notice.

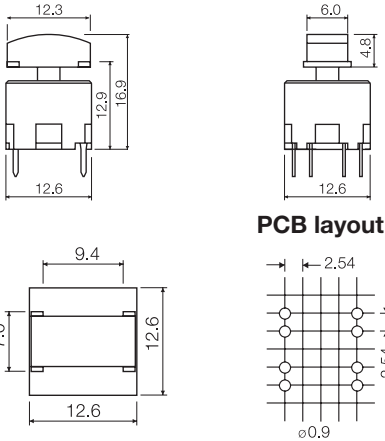
For updates of products and/or changes of specifications please see www.mec.dk

Technical Data

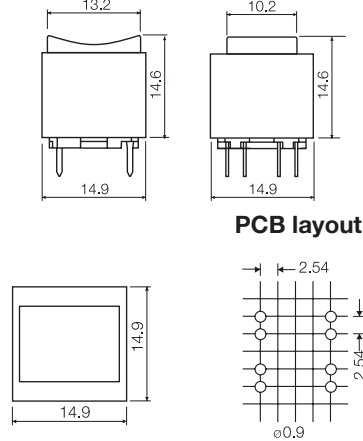
- Max. 250mA/120V/9W AC/6W DC
- 2 pole
- momentary or alternate
- 8 contact functions
- temperature range:
 - low temp: -40/+75°C
 - high temp: -40/+160°C
- through-hole version



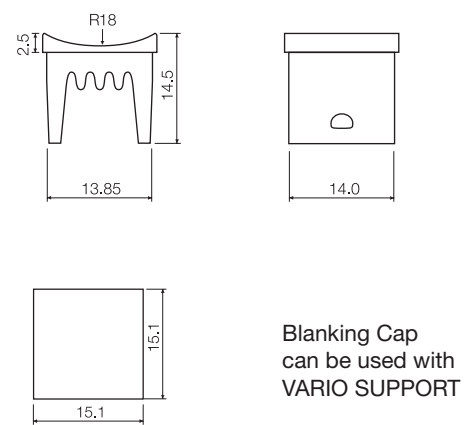
Dimensions 16300




Dimensions 16700



Dimensions 16800



How to order


 **1 5** + **1 6 3 0 0**

Switch

- 15501 mom. silver
- 15551 alt. silver
- 15502 mom. gold
- 15552 alt. gold
- 15500 silent silver
- 15401 mom. silver high temp.
- 15402 mom. gold high temp.
- 15420 silent gold high temp.
- 15451 alt. silver high temp.

Cap

00 blue	30 ultra blue	50 metal dark blue
01 brown	40 dusty blue	53 metal light grey
02 green	42 aqua blue	57 metal dark grey
03 grey	32 mint green	58 metal bordeaux
04 yellow	33 tele grey	
05 golden	34 melon	
06 white	38 noble red	
07 orange		
08 red		
09 black		

 **1 5** + **1 6 7 0 0**

Switch

Cap

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

1 6 8 0 0

Blanking Cap

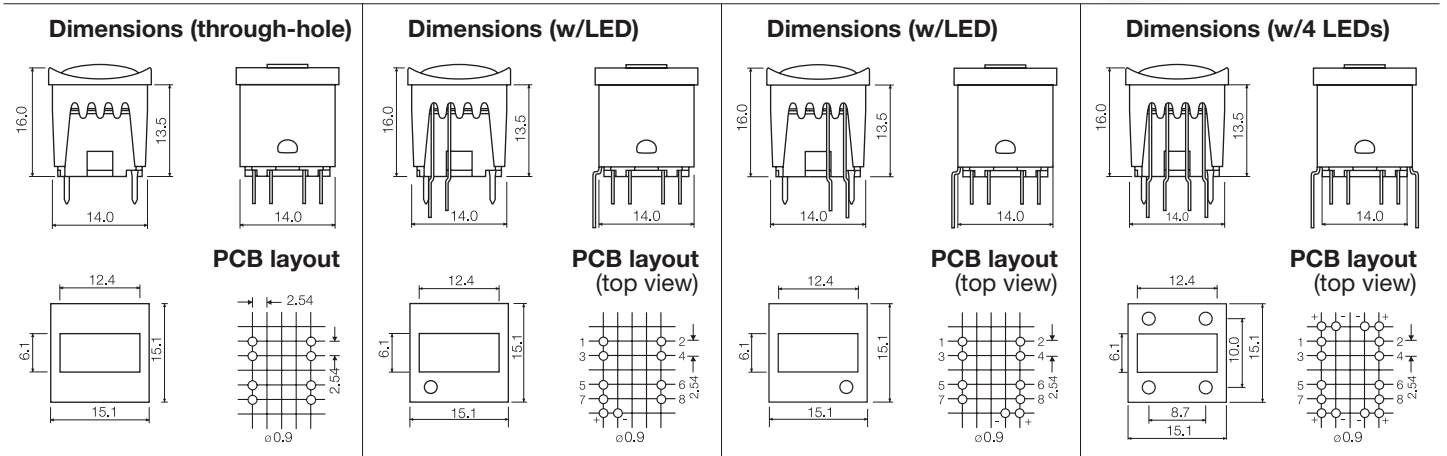
00 blue	06 white	11 transparent
01 brown	07 orange	12 transparent green
02 green	08 red	14 transparent yellow
03 grey	09 black	18 transparent red
04 yellow		
05 golden		

Ordering example: 15551 + 1670009

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

Technical Data

- Max. 250mA/120V/9W AC/6W DC
- 2 pole
- momentary or alternate
- 8 contact functions
- temperature range:
 - low temp: -40/+75°C
 - high temp: -40/+160°C
- through-hole version



How to order



1 5 [] [] [] []

Switch

- 15501 mom. silver
- 15551 alt. silver
- 15502 mom. gold
- 15552 alt. gold
- 15500 silent silver
- 15401 mom. silver high temp.
- 15402 mom. gold high temp.
- 15420 silent gold high temp.
- 15451 alt. silver high temp.

+

1 6 3 0 0 [] [] [] []

Cap

- 00 blue
- 01 brown
- 02 green
- 03 grey
- 04 yellow
- 05 golden
- 06 white
- 07 orange
- 08 red
- 09 black

+

1 6 3 1 0 [] [] [] []

Bezel

- 00 blue
- 01 brown
- 02 green
- 03 grey
- 04 yellow
- 05 golden
- 06 white
- 07 orange
- 08 red
- 09 black

For 16300 and 16310 only

- 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 5 [] [] [] []

Switch

+

1 6 3 0 0 [] [] [] []

Cap



+

[] [] [] [] [] [] [] []

Bezel 16311



[] [] [] [] [] [] [] []

Bezel 16312



Bezel 16314



Bezel 16315



+

1 6 9 2 1 [] [] [] []

- LED 16921 02 green
- 04 yellow
- 08 red

+

1 6 9 2 0 [] [] [] []

- LED 16920 02 green
- 04 yellow
- 08 red

LED 16920 1 required LED 16921 1 required

LED 16920 2 required LED 16921 2 required

Ordering example: 15501 + 1630003 + 1631408 + 1692008 + 1692108

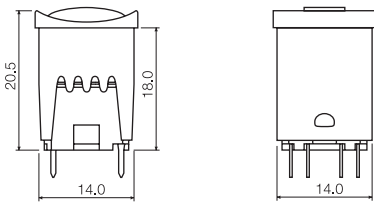
For updates of products and/or changes of specifications please see www.mec.dk

Technical Data

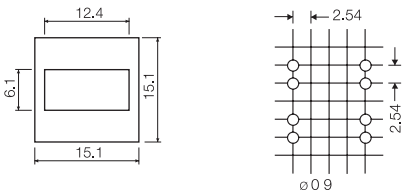
- Max. 250mA/120V/9W AC/6W DC
- 2 pole
- momentary or alternate
- 8 contact functions
- temperature range:
 - low temp: -40/+75°C
 - high temp: -40/+160°C
- through-hole version



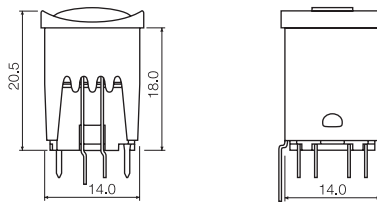
Dimensions



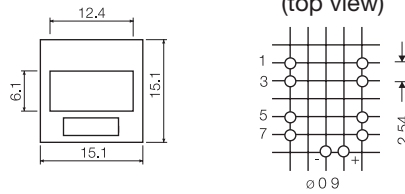
PCB layout



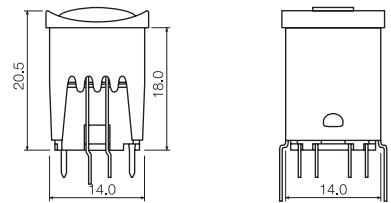
Dimensions (w/LED)



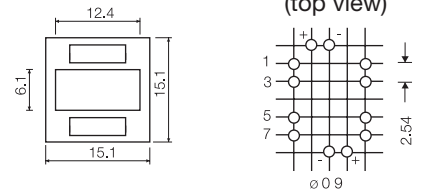
PCB layout (top view)



Dimensions (w/2 LEDs)



PCB layout (top view)



How to order

1 5

+

1 6 2 7 0

+ 1 6 3 0 0

+

1 6 3 2 4



Switch

- 15501 mom. silver
- 15551 alt. silver
- 15502 mom. gold
- 15552 alt. gold
- 15500 silent silver
- 15401 mom. silver high temp.
- 15402 mom. gold high temp.
- 15420 silent gold high temp.
- 15451 alt. silver high temp.

Extender



Cap



- | | |
|-----------|---------------------|
| 00 blue | 30 ultra blue |
| 01 brown | 40 dusty blue |
| 02 green | 42 aqua blue |
| 03 grey | 32 mint green |
| 04 yellow | 33 tele grey |
| 05 golden | 34 melon |
| 06 white | 38 noble red |
| 07 orange | 50 metal dark blue |
| 08 red | 53 metal light grey |
| 09 black | 57 metal dark grey |
| | 58 metal bordeaux |

Bezel



- 01 brown
- 03 grey
- 06 white
- 09 black



1 5

+ 1 6 2 7 0

+ 1 6 3 0 0

+ 1 6 3 2 7

+ 1 6 9 2 2

+ 1 6 9 2 2

+ 1 6 9 2 2

Switch

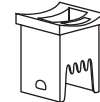
Extender



Cap



16325



Lens



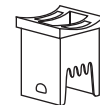
- 02 green
- 04 yellow
- 08 red

LED



- 02 green
- 04 yellow
- 08 red

16326



Lens 16327

2 required








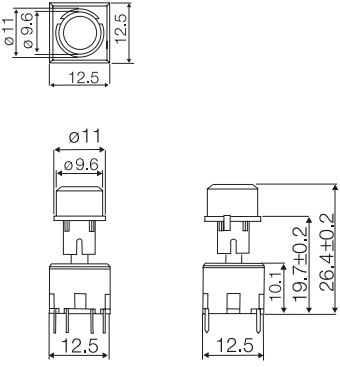
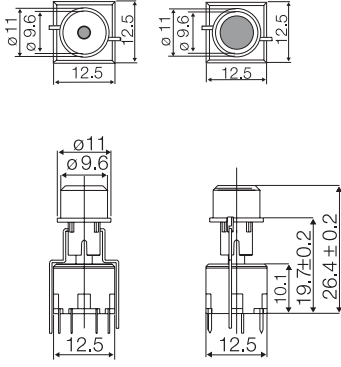
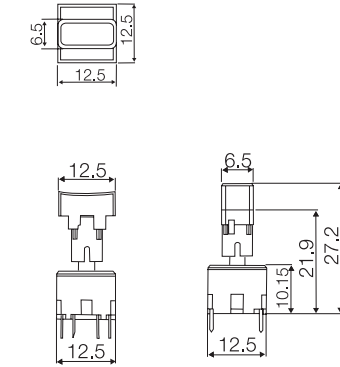
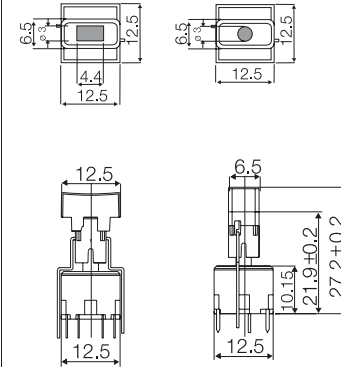













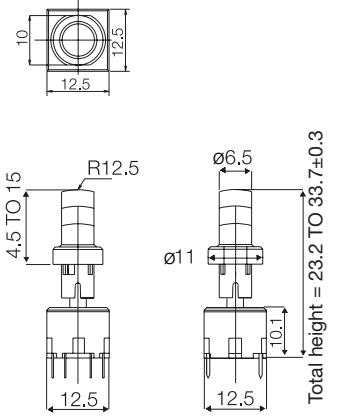
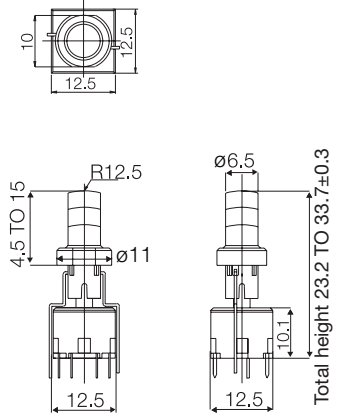
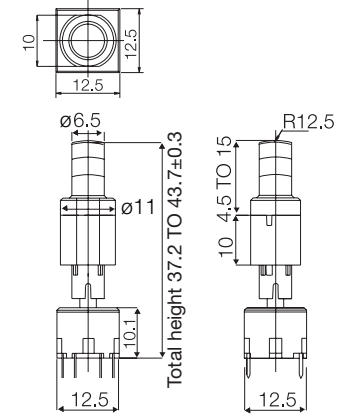
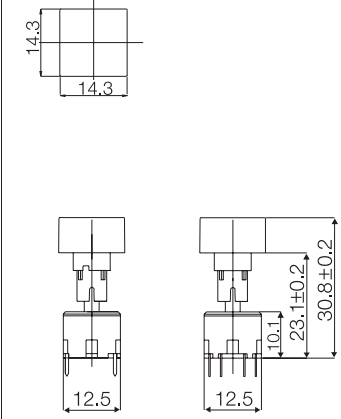











LED 16922

2 required

Ordering example: 15501 + 16270 + 1630008 + 1632509 + 1632708 + 1692208

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

Selection guide

 A 16250 extender is needed when mounting multimec® keycaps on unimec™ switches			
Cap  1D	 1E  1F	 1P	 1Q  1R
Dimensions 			
LED	16923XX  00 blue  20 green  40 yellow  80 red		16923XX  00 blue  20 green  40 yellow  80 red
Cap  1S	 1S illuminated	 1S + 2S	 1K  1K illuminated
Dimensions 			
LED	16923XX  00 blue  20 green  40 yellow  80 red	16923XX  00 blue  20 green  40 yellow  80 red	16924XX  23 green  45 yellow  88 red

For specific dimensions, color codes, how to order and other information please refer to the pages with the keycaps on multimec® switches. For technical information on the unimec™ basic switches please see technical specifications or go to our website www.mec.dk where you will find a page for each option.

The multimec® keycaps 1N, 1T, 1U, 1V, 1WA, 1WD, 1WP and 1X can also be used on unimec™ switches. Please ask for technical drawings on dimensions.