

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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SINCE 1938 DANISH DESIGN IN-HOUSE R&D AND PRODUCTION IN-LINE QUALITY CONTROL

Since its foundation in 1938, MEC has been making state-of the-art electromechanical components.

Located in a suburb of Copenhagen, Denmark, MEC has earned a reputation as one of the leading European manufacturers of high performance tactile switches.

A wealth of know-how has been built up over the years for the benefit of innovative product development and custom solutions.

Despite the trend of outsourcing it has been MEC policy to maintain a high degree of vertical integration that enables us to react promptly to customer requests. 98% of all the parts used in MEC switches are produced in-house.

With 100% in-line inspection, tight tolerance on all parts and use of only quality materials we position ourselves to reach the highest achievable level within high performance tactile switches.

The vertical integration combined with a strong R&D facility enables us to provide custom designs from conception to completion.

To be part of a sustainable industrialised world environmental consciousness is crucial. At MEC we have substituted materials to more environmental-friendly alternatives and are recycling as much as possible. Legal authorities are auditing our environmental management system regularly and confirming that our goal is being reached. All MEC products are RoHS compatible.

MEC have a well established global distribution network that provides a presence in all parts of the world where electronic manufacturing takes place. Through close contact and continuous product training offered to our distributors we maintain a highly qualified and responsive global distribution network.







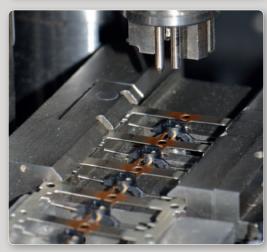


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Caps and accessories series Selection guide

	NON-ILLUMINATED	NON	-ILLUMINATED & ILLUMI	NATED	ILLUMINATED
	1SS Ø6.5mm h=8.0 - 22.5mm *for 5E	1JS Ø9.6mm h=10.4mm	1DS Ø9.6mm h=14.9mm	1GAS Ø11mm h=12.5mm	11S ∅6.5mm h=10.4 - 22.5mm
ROUND	varimec™ round Ø5.2; 7.8;11.6mm h=10.4-22.5mm *for 3E	1US Ø10.6mm h=14.9mm	1ZCS ∅14.3mm h=11.7mm	1GCS Ø15mm h=12.5mm	1LS Ø6.5mm h=12.0mm- 22.5mm
		1Z Ø29.5mm h=12.0mm	1ZW Ø29.5mm h=12.3mm	aquamec Ø10.6mm h from front panel=14.3mm h=24.2-27.2mm	1ES Ø9.6mm h=14.9mm
		10R/10RF Ø30mm h=12.6/11.0mm	10RM16 Ø30mm h=11.0mm	navimec Ø34.25mm h=11.7/ 12.2mm	1FS Ø9.6mm h=14.9mm
	1ZA 18.65x10.1mm h=12.2mm	1PS 12.5x6.5mm h=15.7mm	1XS 7.4x9.4mm h=18.5mm	1Q\$ 12.5x6.5mm h=15.7mm	1RS 12.5x6.5mm h=15.7mm
AR	1M 25.0x10.1mm h=12.2mm	1A 12.5x10.1mm h=12.2mm	1TS 10.6x10.6mm h=14.9mm	1H 12.5x10.1mm h=12.2mm	1C + 2C/2D 15.1x15.1mm h=12.2mm
SQUARE/RECTANGULAR	varimec [™] square 5.2x5.2; 7.8x7.8; 11.6x11.6mm h=10.4-22.5mm *for 3E	1B + 2C/2D 15.1x15.1mm h=12.2mm	1KS 14.3x14.3mm h=19.1mm	2K 17.75x17.75mm	1KBS 14.3x14.3mm h=20.2mm
SQUA	unimec™ 16300 6.0x12.3mm h=16.9mm	10Q 22x22mm h=11.0mm	10QM16 22x22mm h=11.0mm		1KCS 14.3x14.3mm h=20.1mm
	unimec™ 16700 14.9x14.9mm h=14.6mm				1YS 15x15mm h=12.5mm *for 5E
ER	extender for 5G snap on caps h=5-10mm	1NS Ø9.6/□4.9mm h=14.9mm	1VS 10.6x13.25mm h=14.9mm	1ZB 90o R=17.5mm h=12.2mm	
ОТНЕК	1TW/1UW/1VW sealing for 1TS/1US/ /1VS	1WAS 6.5x12.5mm h=14.9mm	1WDS 8.0x15.2mm h=14.9mm	1WPS 6.5x12.5mm h=15.7mm	

^{*}Caps are for 5G if not otherwise specified



CAPS

MANY OPTIONS REGARDING:

SHAPE, SIZE, HEIGHT, COLOUR AND ILLUMINATON **SOLUTIONS:**

NAVIMEC™, CONTROLMEC™, FOILMEC™, VARIMEC™, AQUAMEC™



MEC has a wide range of caps for the multimec® switch series. There are many cap series including navimec $^{\mathsf{TM}}$, controlmec $^{\mathsf{TM}}$ foilmec $^{\mathsf{TM}}$ and aquamec[™] for multimec[®] 5 series switches, and varimec[™] that is still for the 3 series switches.

18 solid colours and 6 transparent colours

Overall height varies from 8.0 mm to 27.2 mm



















ILLUMINATION SINGLE- OR BI-COLOUR MANY OPTIONS IN LED, CAP AND LENS COLOUR



5 LED colour options available: blue, green, yellow, white and red.
Bi-colour combination can be made with any two LED colours.

Illumination can be full, dot, rectangular or legend.







MEC cap range includes options for the front panel sealing. We have designed cap options for outdoor, dusty and humid applications - switch solutions that can endure a rough environment.



PANEL SEALED SOLUTIONS









CONTROLMEC™ 1ZW

PANEL SEALED 1TS/1US/1VS

PANEL SEALED 10R & 10Q SERIES

AQUAMEC™

CAPS FOR FOIL OVERLAY







FOILMEC™ + 1GAS/1GCS + 1JS

Rocker-action pushbutton caps



- Rectangular caps
- Rocker-action pushbutton cap
- 12.5 mm x 10.1 mm; 18.65 mm x 10.1 mm; 25.0 mm x 10.1 mm
- h =12.2 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1A/1H-13.0 x 10.5, 1M-25.7 x 10.5, 1ZA-19.4x10.5

DIMENSIONS SMD w/LED + 1A TH w/LED + 1H TH + 1ZA SMD + 1MMin. 10.16 Max. 12,5 10,1 10,1 25.0 18,65 ILLUMINATED - HOW TO ORDER Switch Mounting Actuation force LED Colour code 1H Lens 1H 5 G + TH9 through-hole 20 02 blue 03 grey 1 transparent **09** black **2** green SH9 surface mount 35 22 green 65 42 yellow 4 yellow Q* **61** white Colour code 1A 6 frosted white **82** red 16 frosted white 8 red 2242 green/yellow 8222 red/green 8242 red/yellow *For an illuminated quiet 2.0N switch add Q to the end of the switch part number. NON-ILLUMINATED-HOW TO ORDER Switch Actuation force Colour code 1A/1M Mounting Cap

5 G + Colours 1ZA: 03 grey TH9 through-hole 20 00 blue 06 white **SH9** surface mount 20Q 02 green 35 03 grey 09 black 30 ultra blue **04** yellow 65 40 dusty blue 06 white 42 aqua blue **08** red 09 black 50 metal dark blue 53 metal light grey 57 metal dark grey 58 metal bordeaux

⁵GSH93582 + 1H098 with illumination OR 5GTH965 + 1ZA57 without illumination OR *5GTH92001Q (illuminated quiet version). Please see colour codes, updates of products and changes of specifications on www.apem.com

Award winning design of rocker-action cap solution

5G + 1B/1C + 2C/2D

- Rectangular caps; square solution
- Rocker-action pushbutton cap
- 15.1 mm x 15.1 mm
- h =12.2 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap and bezel: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1B/1C+2C/2D-15.5 x 15.5



2 green

4 yellow

8 red

6 frosted white

DIMENSIONS TH 1B+2C TH w/LED 1C+2C SMD w/LED 1B+2D SMD 1B+2D Min 10 16 Max. 12,5 15,1 ILLUMINATED - HOW TO ORDER Switch Actuation force LED Cap Bezel Mounting 5 G + + 1 C 2 C TH9 through-hole 20 02 blue Solid Colour Colour Lens colour code SH9 surface mount 35 22 green code 65 42 yellow Q* **61** white **82** red 1 B 2 D 2242 green/yellow Colour Trans-Colour Lens 8222 red/green parent code code *For an illuminated quiet 2.0N switch add Q 8242 red/yellow to the end of the switch part number. NON-ILLUMINATED-HOW TO ORDER Switch Actuation force Cap Bezel Mounting 5 G + 1 B + 2 C OR 2 D TH9 through-hole 20 Solid Colour Colour Colour Lens colour SH9 surface mount 20Q code code code 35 65 **COLOUR CODES** Solid caps 1B Lenses Transparent caps Solid caps 1C Solid colours 2C & 2D: 1 transparent 16 frosted white 00 blue 03 grey 00 blue 06 white

Ordering example:

02 green

03 grey

04 yellow

08 red

09 black

5GTH93561+1C031+2C09 with illumination OR 5GSH965+1B08+2D081 without illumination OR *5GSH92001Q (illuminated quiet version) Please see colour codes, updates of products and changes of specifications on www.apem.com

03 grey **06** white

08 red **09** black

08 red

09 black

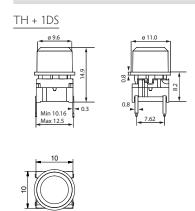
multimec®

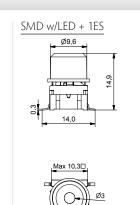
Round cap with soft edges

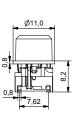


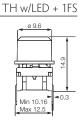
- Round caps
- Ø9.6 mm
- h =14.9 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap :-40/+85°C
- Panel cut-out: 1DS/1ES/1FS-Ø10.0

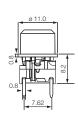
DIMENSIONS









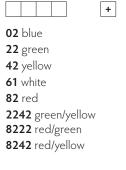




ILLUMINATED - HOW TO ORDER

Switch	Mounting	Actuation force
5 G		
	TH9 through-hole	20
	SH9 surface mount	35
		65
		Q*

	4
02 blue	
22 green	
42 yellow	
Z1l.:	



-	_d	_			
1ES					
		$\overline{}$			



1DS



Colour code

00 blue 02 green 03 grey

04 yellow

06 white **08** red 09 black

11 transparent 16 frosted white Lens

1 transparent

2 green

4 yellow

6 frosted white

8 red

NON-ILLUMINATED-HOW TO ORDER

Switch	Mounting	Actuation force		<u>Cap</u>	Colour code		
5 G			+				
	TH9 through-hole	20		1DS	00 blue	30 ultra blue	50 metal dark blue
	SH9 surface mount	20Q			02 green	40 dusty blue	53 metal light grey
		35			03 grey	42 aqua blue	57 metal dark grey
		65			04 yellow	32 mint green	58 metal bordeaux
					06 white	33 tele grey	
					08 red	34 melon	
					09 black	38 noble red	

^{*}For an illuminated quiet 2.0N switch add Q to the end of the switch part number.

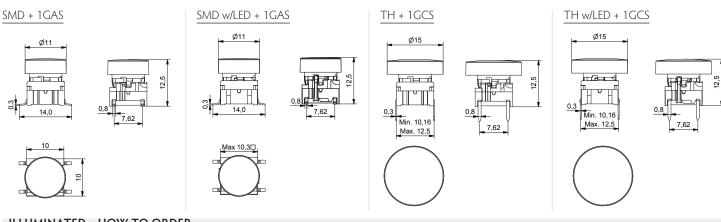
5G + 1GAS/1GCS

- Round caps
- Excellent option for foil overlay
- Ø11 mm; Ø15 mm
- h =12.5 mm
- Material: polyamide
- Temp. Range:
 - Solid cap: -40/+160°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1GAS/1GCS-Ø11.4; Ø15.4





DIMENSIONS



ILLUMINAT	ED – HOW TO ORDER					
Switch	Mounting	Actuation force	LED		Cap transparent colour	Colour code
5 G				+		
	TH9 through-hole SH9 surface mount	20 35 65	02 blue 22 green 42 yellow		1GAS	11 transparent16 frosted white
		Q*	61 white 82 red		1GCS	
			2242 green/yellow 8222 red/green 8242 red/yellow			

^{*}For an illuminated quiet 2.0N switch add Q to the end of the switch part number.

NON-ILLUMINATED-HOW TO ORDER

Switch 5 G	Mounting	Actuation force	+	Cap solid colour	Colour code
	TH9 through-hole SH9 surface mount	20 20Q 35 65		1GAS	00 blue02 green03 grey04 yellow
				1GCS	06 white 08 red 09 black

Low cap, excellent for foil overlay



- Round cap
- Ø9.6 mm
- h = 10.4 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1JS-Ø10.4

*Legends on the picture are custom

DIMENSIONS

TH + 1JS















+

ILLUMINATED - HOW TO ORDER

Switch

5 G

TH9 through-hole

Mounting

20

SH9 surface mount

Actuation force

35

65 Q* LED

02 blue

22 green

42 yellow

61 white

82 red

2242 green/yellow

8222 red/green

8242 red/yellow

Cap transparent

1 J S

Colour code

11 transparent

16 frosted white

NON-ILLUMINATED-HOW TO ORDER

Switch5 G

Mounting

TH9 through-hole SH9 surface mount

20 20Q

35 65

Actuation force

Cap solid colour





Colour code



00 blue

02 green

03 grey

04 yellow

06 white

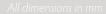
08 red

09 black

Square cap with different top surface options

5G + 1KS/1KBS/1KCS+2K

- Square caps
- Different top surfaces: flat, convex or concave
- 14.3 mm x 14.3 mm
- h =19.1 mm; 20.2 mm; 20.1 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1KS/1KBS/1KCS-14.7 x 14.7

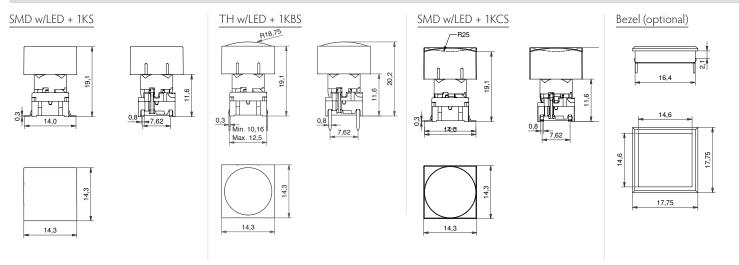


Tolerances -/+0 2mm



Custom solution

DIMENSIONS

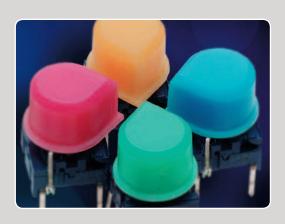


ILLUMINATED - HOW TO ORDER

Switch 5 G	Mounting	Actuation force	<u>LED</u>	+	Cap 1 1 1 6	Bezel 2 K
	TH9 through-hole SH9 surface mount	20 35 65 Q*	02 blue22 green42 yellow61 white82 red2242 green/yellow		Frosted white lens and transparent lid 1KS 1KCS	03 grey 06 white 08 red 09 black
	minated quiet 2.0N switc		8222 red/green 8242 red/yellow		1KBS	

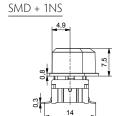
*For an illuminated quiet 2.0N switch add Q to the end of the switch part number.	8222 red/green 8242 red/yellow	1KBS	
NON-ILLUMINATED- HOW TO ORDER			
Switch Mounting Actuation for TH9 through-hole SH9 surface mount 20Q 35 65		1 6 + Colour code 00 blue 02 green 03 grey 04 yellow 06 white 08 red 09 black	Bezel 2 K 03 grey 06 white 08 red 09 black

multimec[®] Teardrop-shaped cap



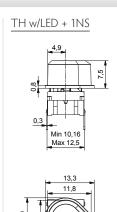
- Teardrop-shaped cap
- Ø9.6 mm; □ = 4.9 mm
- h =14.9 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1NS-Ø10.2/ □ = 5.1

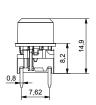
DIMENSIONS











ILLUMINATED - HOW TO ORDER

Switch 5 G Mounting

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

20

35 65 Q* LED

02 blue

22 green 42 yellow

61 white

82 red

2242 green/yellow 8222 red/green

8242 red/yellow

+

Cap transparent

1 N S

Colour code

16 frosted white

NON-ILLUMINATED-HOW TO ORDER

Switch 5 G

Mounting

TH9 through-hole SH9 surface mount Actuation force

20

35 65

20Q

+

Cap 1 N S



Colour code

03 grey

09 black

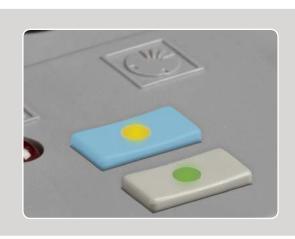
^{*}For an illuminated quiet 2.0N switch add Q to the end of the switch part number.

Ordering example:

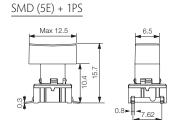
⁵GSH965+1NS09 non-illuminated OR 5GTH93502+1NS16 with illumination OR *5GTH92082Q (illuminated quiet version) Please see colour codes, updates of products and changes of specifications on www.apem.com

Concave rectangular caps

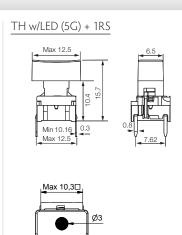
- Rectangular caps
- Concave top surface
- 12.5 mm x 6.5 mm
- h =15.7 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1PS/1QS/1RS-7.0 x 13.0, R max. 1.0

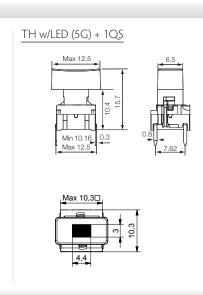


DIMENSIONS









Lens

1 transparent

6 frosted white

ILLUMINATED - HOW TO ORDER

LED Switch Actuation force Colour code Mounting 5 G + TH9 through-hole 20 02 blue 00 blue **SH9** surface mount 35 22 green 03 grey **09** black 65 42 yellow Q* 61 white **82** red 2242 green/yellow 8222 red/green 8242 red/yellow



NON-ILLUMINATED-HOW TO ORDER

Switch Colour code Mounting Actuation force Cap 5 E + 00 blue 06 white TH9 through-hole 20 5 G **SH9** surface mount 20Q 02 green **08** red 35 03 grey 09 black 04 yellow 65

^{*}For an illuminated quiet 2.0N switch add Q to the end of the switch part number.

Cap range with variable heights and illumination options

5E/5G + 1SS/1IS/1LS

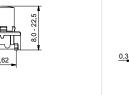


- Round caps
- 9 standard options in overall height
- h =8-22.5 mm; 10.4-22.5 mm; 12-22.5 mm
- Material: polyamide
- Temp. Range:
 - Solid cap: -40/+160°C (1SS); -40/+65°C (1LS)
 - Transparent cap: -40/+85°C
- Panel cut-out: 1SS/1LS/1IS-Ø7.0

DIMENSIONS



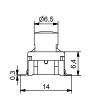






TH w/LED (5G) + 1LS

SMD w/LED (5G) + 1IS







	10	
10	\bigcirc	□

ILLUMINATED - HOW TO ORDER

Switch 5 G	Mounting	Actuation force	LED +	<u>Cap</u>	Colour code	Lens	Height	1LS
	TH9 through-hole SH9 surface mount	20 35 65	02 blue 22 green 42 yellow	1LS with lens	00 blue02 green03 grey	1 transparent2 green4 yellow	12.0 15.0 16.0	19.0 22.5
		Q*	61 white 82 red 2242 green/yellow 8222 red/green	11S fully illuminated	04 yellow 06 white 08 red 09 black	6 frosted white 8 red	Height 10.4 11.0 12.0	16.0 19.0 22.5
	illuminated quiet 2.0N s nd of the switch part nu		8242 red/yellow		11 transparent 16 frosted white		15.0	

NON-ILLUMINATED-HOW TO ORDER

Switch 5 E	Mounting	Actuation force	+	<u>Cap</u>	Colour code	Height .	
5 G	TH9 through-hole SH9 surface mount	20 20Q 35 65		1SS solid colour	00 blue02 green03 grey04 yellow06 white08 red09 black	08.0 09.5 10.4 11.0 12.0 15.0	16.0 19.0 22.5

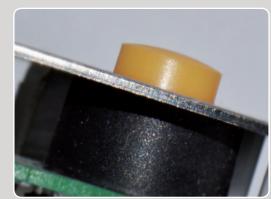
Ordering example:

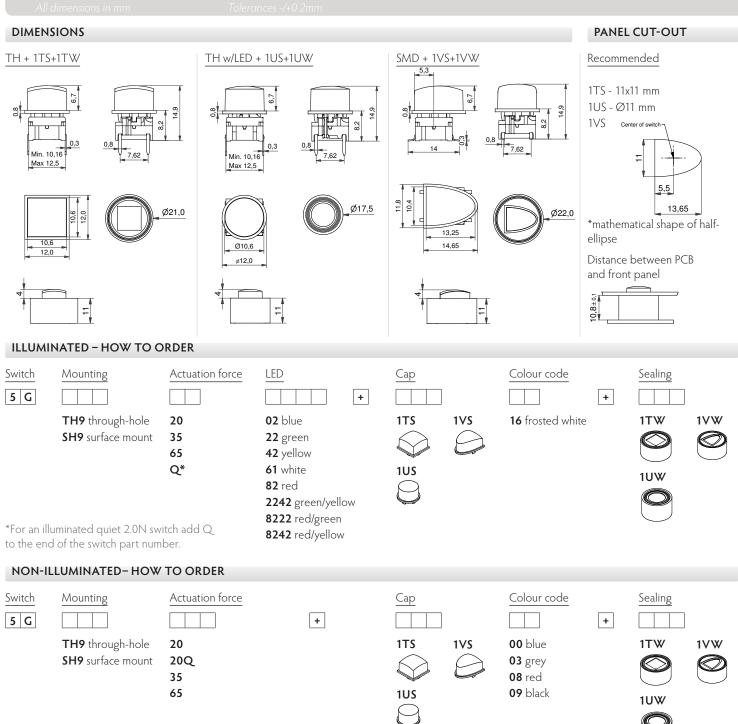
5ETH920+1SS04-09.5 without illumination OR 5GSH93542+1IS16-19.0 with illumination OR *5GTH9208222Q (illuminated quiet version) Please see colour codes, updates of products and changes of specifications on www.apem.com

multimec®

Panel sealed cap solutions

- Square, round and half-ellipse shaped caps
- Rounded top surface
- Option to have it panel sealed
 - IP65 = 5G+1TS+1TW
 - IP67 = 5G+1US+1UW
 - IP65 = 5G+1VS+1VW
- 10.6 mm x 10.6 mm; Ø10.6 mm; 10.6 mm x 13.25 mm
- h =14.9 mm
- Material: ABS/polycarbonate (cap); silicone rubber (sealing)
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
 - Panel cut-out: 1TS-11.0 x 11.0, 1US-Ø11.0, 1VS-11.0 x 13.65



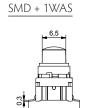


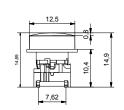
multimec[®] Ellipse-shaped caps

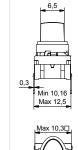


- Ellipse-shaped caps
- Convex or concave top surface
- 6.5 mm x 12.5 mm; 8.0 mm x 15.2 mm
- h = 15.7 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1WAS/1WPS-12.9x6.9, 1WDS-15.6x8.4

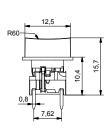
DIMENSIONS

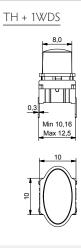


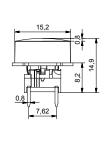




TH w/LED + 1WPS



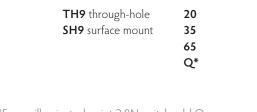






ILLUMINATED - HOW TO ORDER

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



^{*}For an illuminated quiet 2.0N switch add Q

22 green 42 yellow 61 white **82** red

2242 green/yellow 8222 red/green

8242 red/yellow

1WAS

Cap



Colour code

16 frosted white

NON-ILLUMINATED-HOW TO ORDER

Switch 5 G Mounting

to the end of the switch part number.

TH9 through-hole SH9 surface mount Actuation force

20 20Q 35

65

+

Cap 1WAS

+



1WDS

Colour code

00 blue 03 grey

08 red

09 black 30 ultra blue

40 dusty blue

42 aqua blue

53 metal light grey 57 metal dark grey

Ordering example:

5GTH935+1WAS00 without illumination OR 5GSH96582+1WDS16 with illumination OR *5GSH92042Q (illuminated quiet version) Please see colour codes, updates of products and changes of specifications on www.apem.com

LED 02 blue

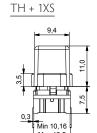
Rectangular cap with soft edges

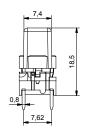
- Rectangular cap
- 7.4 mm x 9.4 mm
- h =18.5 mm



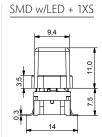


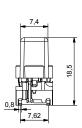
DIMENSIONS













ILLUMINATED - HOW TO ORDER

Mounting

Switch

5 G

TH9 through-hole SH9 surface mount Actuation force

35

65

Q*



LED

02 blue

22 green

42 yellow

61 white **82** red

2242 green/yellow 8222 red/green 8242 red/yellow

+

Cap 1 X S

Colour code

11 transparent 16 frosted white

NON-ILLUMINATED-HOW TO ORDER

TH9 through-hole

SH9 surface moun

Switch 5 G Mounting

Actuation force

20

35

65

20Q

+

1 X S

Colour code

00 blue

02 green 03 grey

04 yellow

06 white **08** red

09 black

foilmec™

Square cap for foil overlay



- Square cap
- Designed for foil overlay
- 15 mm x 15 mm
- h =12.5 mm
- Material: ABS/polycarbonate
- Temp. Range: -40/+65°C
- Panel cut-out: 1YS-16 x 16

All dimensions in mm

Tolerances 7+0.2mm

RECOMMENDED PLACEMENT OF LEDS DIMENSIONS SMD + 1YS TH + 1YS SMD TΗ Max 12,5 PCB layout with LED PCB layout with LED placement placement LED Recommendation SMD: 1206 - 0805 - 0603 - 0402 TH: 3 mm - Ø max 3.2 - Height max 6.5 mm 13.90 13,90

HOW TO ORDER

Switch

5 E

Mounting

TH9 through-hole **SH9** surface mount

Actuation force

20

20 20Q

20Q 35

65

Cap

+

1 Y S 0 6 1 6

1YS0616 white cap with frosted white lens

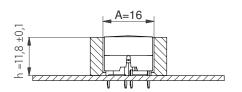


A: We recommend you to allocate enough space for travel of the foil and leave the area free from adhesive. Switch travel = 1 mm.

H: The height recommendation does not include the foil. We recommend embossing the foil to follow the curve of the keycap.

The best tactile feeling is obtained with a small pretravel.

The dimension H is based on an embossed foil. With a flat foil the dimension "H" will have to be adjusted, and enough area between the cap and front panel needs to be addressed to ensure foil flexibility.

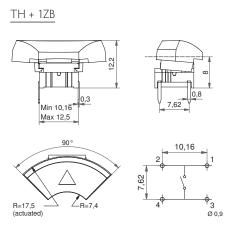


Cap solution for navigating

- Round solution
- Designed for navigating a display or controlling a unit
- 90° R=17.5 mm; Ø14.3 mm (Ø34.25 mm)
- h =12.2 mm; 11.7 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1ZB-R₁ 7,1 R₂ 17,5 17,75 90° 1ZCS-Ø14.7
- navimec[™] panel cut-out: Ø35,0 35,5 Depending on application



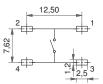
DIMENSIONS





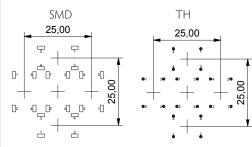






+

PCB layout for Navimec solution



We recommend using through-hole terminals for precise placing.

ILLUMINATED - HOW TO ORDER

Switch	Mounting	Actuation force
5 G		
	TH9 through-hole	20
	(SH9 surface mount)	35
		65
		Q*

^{*}For an illuminated quiet 2.0N switch add Q to the end of the switch part number.

LL	V
	_



02 blue

22 green

42 yellow

61 white

82 red

2242 green/yellow

8222 red/green

8242 red/yellow

Cap

1 Z B 1 6

Frosted white with black hard paint and laser marking







Legend code



DLMH136 ▲



LMH118 OK LМН123 **Ů**

NON-ILLUMINATED- HOW TO ORDER

NON	-ILLUMINATED- HO	W TO ORDER					
Switch 5 G	Mounting TH9 through-hole (SH9 surface mount)	Actuation force + 20 20Q 35	Cap 1 Z B	Colour code O3 grey O6 white O9 black	50 metal dark blue53 metal light grey57 metal dark grey	Legend code** D136	pad printed legends
		65	1 Z C S	30 ultra blue 40 dusty blue 42 aqua blue	58 metal bordeaux	038 RESET 105 ENTER 118 OK 119 SET	120 MENU 121 FUNC 122 HOME 123 ७

^{**} White legends on black caps are standard, other options are available but considered custom products. See pages 34-35 or www.apem.com

Ordering example: 4x 5GTH93561+1ZB16DLMH13609 + 1x 5GTH93561+1ZCS16LMH12309 (with illumination) OR 4x 5GSH920+1ZB09 + 1x 5GSH920+1ZCS09 (without illumination) OR *5GTH92002Q (lluminated quiet version) Please see colour codes, updates of products and changes of specifications on www.apem.com

navimec™ module





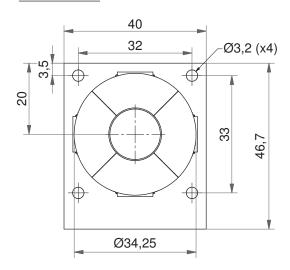
- Module should be attached to the front plate with bolts (bolts not supplied by MEC)
- Round solution
- Ø34.25 mm
- h =11.7 mm; 12.2 mm
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Recommended panel cut-out: Ø35,0 35,5 Depending on application

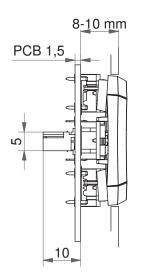
All dimensions in mm

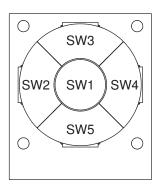
Tolerances -/+0 2mm

DIMENSIONS

Navimec Module







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

HOW TO ORDER

navimec™ Module ordering options:

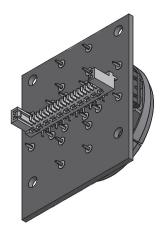
- navimec[™] Module excl. keycaps
- navimec[™] Module incl. keycaps
- navimec[™] Module incl. keycaps with legends
- Illuminated navimec[™] Module excl. keycaps
- Illuminated navimec[™] Module incl. keycaps with legends

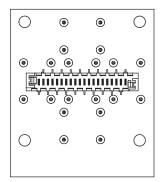
Part no. for a module:

navimec[™] Module has many customisation options regarding actuation force, cap and LED colours and legends. Because of that "How to order" has been placed on page 43.

See previous page for information on switch and cap options.

SEE THE "HOW TO ORDER" GRAPH AS WELL AS CIRCUIT DIAGRAM AND CONNECTOR INFO ON PAGE 43





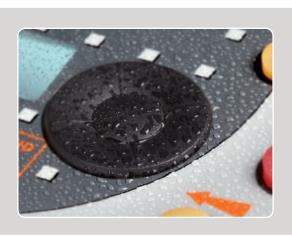
Ordering example:

⁹⁵NA200913611806 (without illumination)

⁹⁵NB350116LMH13612309 (with illumination)

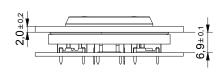
Please see colour codes, updates of products and changes of specifications on www.apem.com

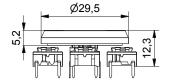
- Round cap
- Panel sealed solution, designed to control a unit or navigate a display
- Ø29.5 mm
- h = 12.3 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1ZW-Ø30.3



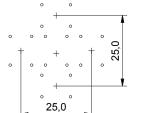
DIMENSIONS

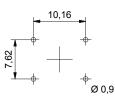
TH + 1ZW





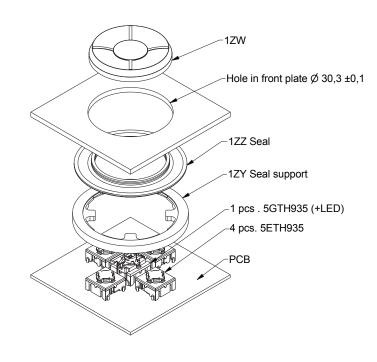
PCB layout





We recommend using through-hole terminals for precise placing.

MOUNTING EXAMPLE



ILLUMINATED - HOW TO ORDER

Switch 5 G Mounting

TH9 through-hole (**SH9** surface mount) Actuation force

65

35

65

LED (optional)

02 blue

22 green 42 yellow

61 white

82 red 2242 green/yellow 8222 red/green

8242 red/yellow

Colour code

00 blue

03 grey 06 white

08 red 09 black

16 frosted white

Legend code

118 OK 123 **U**

Switch 5 E Mounting

TH9 through-hole

(SH9 surface mount)

Actuation force

+

Panel seal

+

Seal

1 Z Z

09 black



Seal support



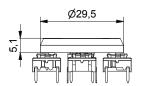
multimec[®] Cap for a control unit

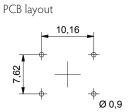


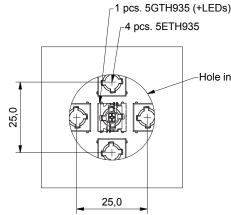
- Round cap
- Designed to control a unit or navigate in a display
- Ø29.5 mm
- h =12.0 mm
- Material: ABS/polycarbonate
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C
- Panel cut-out: 1Z-Ø30.3

DIMENSIONS

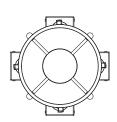


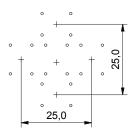






Hole in front plate Ø 30,3 ±0,1





We recommend using through-hole terminals for precise placing.

ILLUMINATED - HOW TO ORDER

5	G

Mounting

Actuation force

LED (optional)

Colour code

Legend code

Switch

35

65

02 blue

+

00 blue

136

TH9 through-hole

22 green

03 grey 06 white

(SH9 surface mount)

42 yellow **61** white

08 red

118 OK 123 **U**

82 red 2242 green/yellow

8222 red/green 8242 red/yellow 09 black

16 frosted white

Switch

Mounting

Actuation force

5 E

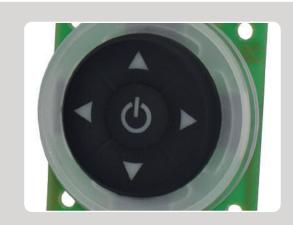
TH9 through-hole 35 (**SH9** surface mount)

Panel sealed or non-panel sealed module

controlmec[™] module

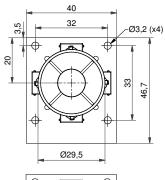
- Module should be attached to the front plate with bolts (bolts not supplied by MEC)
- Round cap
- Panel sealed or non-panel sealed solution
- Ø29.5 mm
- h =12.3 mm; 12.0 mm
- Temp. Range:
 - Solid cap: -40/+65°C
 - Transparent cap: -40/+85°C

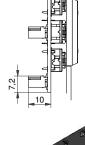
■ Panel cut-out: 1ZW/1Z module-Ø30.3

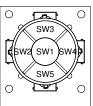


DIMENSIONS

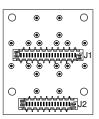
1Z module









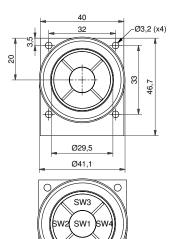


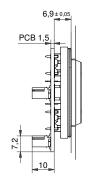


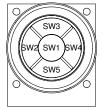
HOW TO ORDER

- controlmec[™] Module excl. keycaps
- controlmec[™] Module incl. keycaps
- controlmec[™] Module incl. keycaps with legends
- illuminated controlmec[™] Module excl. keycaps
- illuminated controlmec[™] Module incl. keycaps with legends
- Sealed controlmec[™] Module excl. keycaps
- Sealed controlmec[™] Module incl. keycaps
- Sealed controlmec[™] Module incl. keycaps with legends
- Sealed illuminated controlmec[™] Module excl. keycaps
- Sealed illuminated controlmec[™] Module incl. keycaps with legends

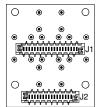
1ZW module











Part no. for a module:

controlmec™ Module has many customisation options regarding actuation force, cap and LED colours and legends. Because of that "How to order" has been placed on page 43.

See previous pages for information on switch and cap options.

SEE THE "HOW TO ORDER" GRAPH AS WELL AS CIRCUIT DIAGRAM AND CONNECTOR INFO ON PAGE 43

Ordering example: 95CA350913611806 (without illumination)

95CB358216LMH13612309 (with illumination)

95CC6509 (sealed without illumination)

95CD356116LMH13612309 (sealed with illumination)

Please see colour codes, updates of products and changes of specifications on www.apem.com