Multimec™ 3A

High performance tactile switches • robust



DISTINCTIVE FEATURES

10 x 10 mm; h=6.4 mm

Hinge-type cap retention system



ENVIRONMENTAL SPECIFICATIONS

- Sealing : IP67 according to IEC 60529
- Working and storage temperature : -40 °C/+160 °C (-40 °F to +320 °F)
- Soldering :
  - through-hole : IEC 60068-2-20 8
  - surface mount : JEDEC J-STD-020E

ELECTRICAL SPECIFICATIONS

- Recommended load :
  - Gold contacts : 0.5µ-50 mA 24 VDC
  - Silver contacts : 0.5-50 mA 24 VDC
- Contact resistance : <30 mΩ - typically 10 mΩ
- Insulation resistance : >10 MΩ
- Contact bounce : <2 mS - typically 0.5 mS

MECHANICAL SPECIFICATIONS

- Standard actuation force : 3.5 N
- Max. actuation force : 100 N for 10 sec
- Travel : 1 mm
- Lifetime : >10,000,000 cycles

The company reserves the right to change specifications without notice.

MATERIALS

- Housing : PPS UL94V0
- Actuator : PPS UL94V0
- Sealing : Silicone rubber
- Contacts spring : Stainless steel
  Silver : +3 µAg
  Gold : +1 µAu
- Fixed contacts :
  Silver : SnCu + 2 µNI + 3 µAg
  Gold : SnCu + 2 µNI + 1 µAu
- Terminals : SnCu + 2 µNI + 3 µSn100

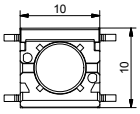
All tolerance if not otherwise specified ±0.2 mm.

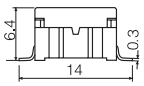
Multimec™ 3A

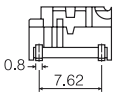
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3A - SMD



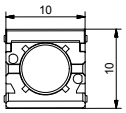


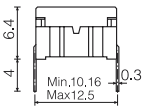


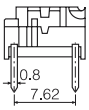


3A - TH



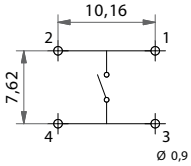




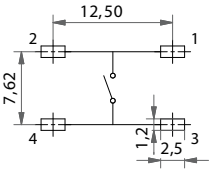


PCB LAYOUT & CIRCUIT DIAGRAM

TH Non-ill.



SMD non-ill.



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BUILD YOUR PART NUMBER

NON-ILLUMINATED

3A		
SERIES	MOUNTING	OPTIONAL

MOUNTING	
TH9	through-hole
SH9	surface mount

OPTIONAL	
Q	quiet contact
R	tape & reel (with SMD only)
G	gold contacts

ABOUT THIS SERIES

Caps and accessories : for the full range of accessories for Multimec™ 3A please see the website.

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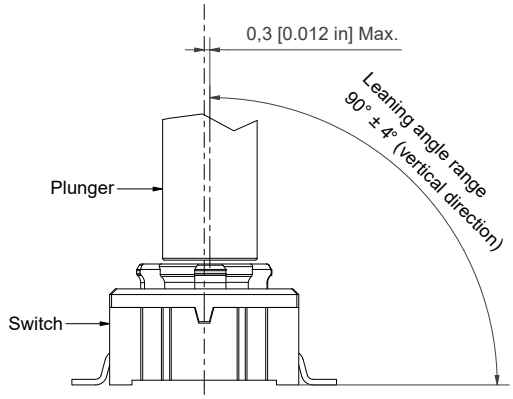
TAPE & REEL

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

- Reel diameter: Ø330 mm
- Tape width: 24 mm
- Pitch: see list
- Tape and reel material: antistatic or better
- Quantity per reel: see list

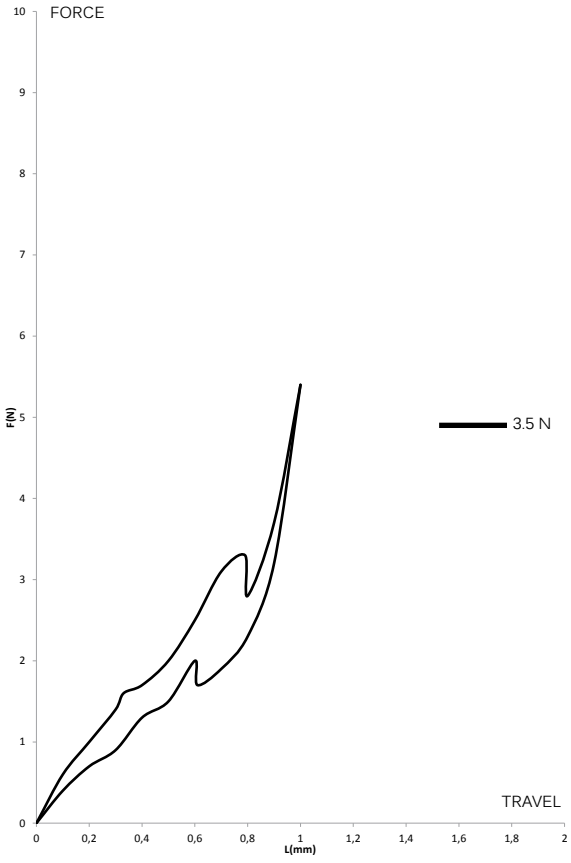
PART NO.	ORDERING CODE	PITCH	QUANTITY PER REEL
3ASH9	3ASH9R	16	500

RECOMMENDED OPERATING CONDITIONS



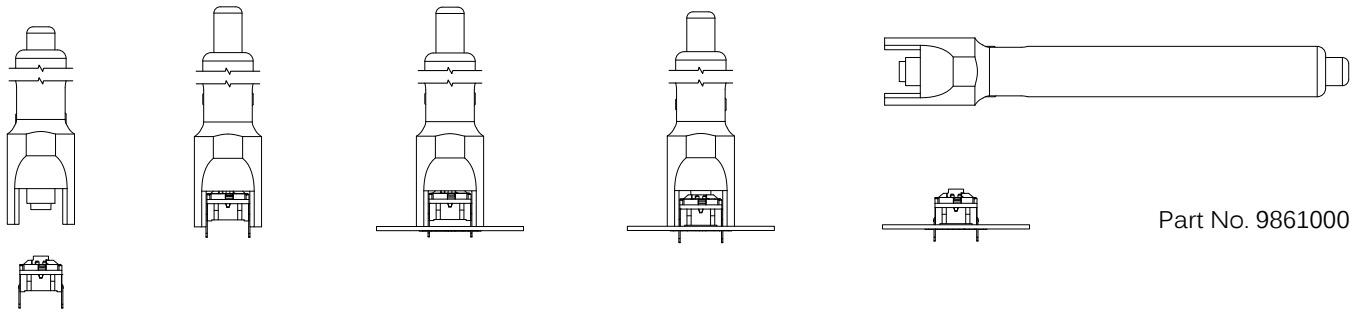
For the optimal performance of the switch use the recommended operating conditions.

OPERATING FORCE



MOUNTING

MOUNTING TOOLS FOR MULTIMEC™ THROUGH-HOLE SWITCHES



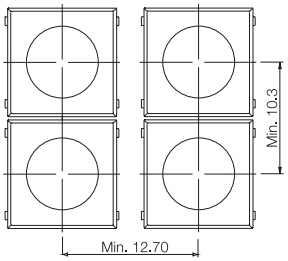
Part No. 9861000

Multimec™ 3A

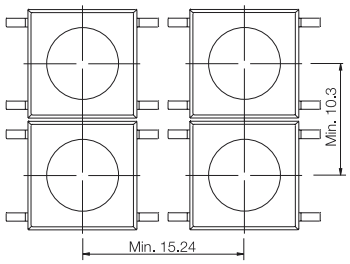
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MOUNTING (CONTINUED)

SPACE REQUIREMENT - MATRIX MOUNTING

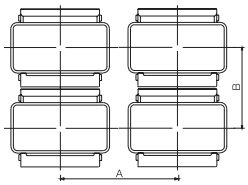


Through-hole (TH)

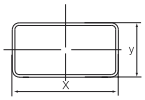


Surface mount (SMD)

SPACE REQUIREMENT - SWITCH/CAP



Switch spacing



Cap dimensions



Panel cut-out

CAP SERIES	RECOMMENDED MIN.SWITCH SPACING AxB	NOMINAL CAP DIMENSION WxH	RECOMMENDED MIN. PANEL CUT-CUT
1A/1H	12.7x10.3	12.6X10.1	13.0X10.5
1B+2C/2D	15.4x15.4	15.1x15.1	15.5x15.5
1M	25.3x10.3	25.0X10.1	25.7x10.5
1ZA	19.0x10.3	18.7X10.1	19.4x10.5
1ZB	24.34x12.1	R1=7.4 ; R2=17.5 90°	R1=7.1 ; R2=17.5 -17.75 90°

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USAGE GUIDELINES

HOW TO GET THE BEST RESULTS WITH MEC SWITCHES ?

These guidelines are offered to users of MEC Switches as an aid to ensure successful and reliable switch operation. Please see the technical specifications for details on operating and storage temperatures and soldering guidelines to make sure you select the best switch for your application. When reflow soldering is taking place, MEC strongly recommend that the temperature profile is analyzed and compared with the temperature rating of the switch. It is also important to monitor the accumulated heat buildup from both the pre-heat zones and the solder zone.

Most standard accessories for multimec™ 3 series switches are made from ABS plastic with a maximum operating temperature of 65 °C. It is strongly recommended that accessories are mounted after soldering of the switch.
If this is not possible care must be taken not to overheat the accessories during the soldering process.
For accessories made from other plastic materials please see multimec™ cap & bezel technical specifications.

MOUNTING AND DISMOUNTING

If switches are to be mounted in rows it is essential that the recommendations regarding spacing are followed. PC board thickness should be 1.4 ±0.2 mm and terminal hole diameter should be 0.9 mm.

All multimec™ caps and bezels are easily slid onto the switch modules and can be changed at a later time with the exception of the 3E caps. Once these caps are installed they are not designed to be removed. To do so may cause damage to the switch and the PC board if not done very carefully.

A mounting tool is available for through hole multimec™ 3 series switches.

SOLDERING AND CLEANING MULTIMEC™ 3 SERIES

Multimec™ 3 series switches are fully sealed to IP67 specifications to prevent solder flux and aqueous based cleaning solutions from entering the switch and contaminating the contacts. The switches can be placed on the PC board with other components and reflow soldered. Multimec™ 3 series offers a high level of sealing, however, with aqueous solvent solutions care must be taken to avoid the worst case situation with water jets, complete immersion into a liquid with a temperature below the board or surface tension reducing additives.

Recommended cleaning methods are demineralized water. Any surface tension reducing agents, such as soap, must not be used as they risk causing a potential leakage of the switch.

SOLDERING - THROUGH HOLE VERSIONS

Hand soldering: max. 350 °C for max. 3 sec

Wave soldering: heat built up in the switch during pre-heating and soldering must not exceed the maximum operating temperature of the switch. Peak temperature must not exceed 260 °C, and soldering time is max 10 sec. (IEC 60068-2-20 8)

SOLDERING - SURFACE MOUNT VERSIONS

For all methods - infrared, convection and vapor phase. The upper limit 240 °C/40 sec must be observed. The soldering temperature profile must have moderate temperature gradients. (JEDEC J-STD-020E)

ROHS COMPLIANCE

As of 1 July 2006 MEC has completed the conversion to RoHS compliance. For more info please see our homepage www.apem.com

TEMPERATURE LIMITS

Switch	160 °C
Accessories	65 °C

PACKAGING

Multimec™ 3 series switches are packed in rigid tubes of 50 pieces each.

A box contains 1.000 pcs.

The surface mount versions of multimec™ 3A series switches can also be delivered on tape/reel.
Each reel contains 500 pcs.