

General Information

How to get the best results with MEC Switches

Usage Guidelines

These guidelines are offered to users of MEC switches as an aid to ensure successful and reliable switch operation.

Temperature

Both UNIMEC and MULTIMEC switches are produced in standard and high temperature materials. Please see the technical specifications for details on operating and storage temperatures and soldering guidelines to make sure you select the switch best suited to your application. When flow soldering, MEC strongly recommend that the temperature profile is analysed and compared with the temperature rating of the switch. In case of doubt always select the high temperature version 3XXH9.

All accessories for both UNIMEC and MULTIMEC switches are made from ABS plastic with a maximum operating temperature of 65°C. Care must be taken not to overheat the accessories during the soldering process. In soldering processes exposing the switch to high temperatures it is strongly recommended that accessories are mounted after soldering. LED's have their own temperature specifications. When fitted in a high temperature switch the LED will determine the max. operating temperature, i.e. 3FTH922 has an upper temperature limit of 85°C - not 160°C!

When infrared reflow soldering is used, it is very important to monitor the surface temperature of the switch during the pre-heat stage to prevent excessive heat buildup and overheating during soldering.

Mounting

If switches are to be mounted in rows it is critical that the recommendations regarding spacing are followed. PC board thickness should be 1.2 to 1.6mm and terminal hole diameters should be 0.9mm.

All UNIMEC and MULTIMEC caps and bezels are easily snapped onto the switch modules and can be changed at a later time with the exception of the UNIMEC 16.700 cap. Once this cap is installed it is not designed to be removed. To do so may cause damage to the switch and the PC board if not done with extreme care. If the 16.300 or 16.700 cap must be removed from an alternate action switch, make sure that the switch actuator is in the released, upper position before attempting to remove the cap. This will prevent possible damage to the internal latching pin.

Care must be taken when inserting the 3FT switch and LED assembly into the PC board. Do not press direct on the LED. This will force the LED down into the actuator and cause the switch contacts to remain in the closed position. To correct the fault, the LED must be raised slightly and centered in the actuator to assure unrestricted movement of the actuator.

Soldering and Cleaning UNIMEC

Most assembly and field problems experienced by users of unsealed switches are caused by the contamination of the contacts during soldering and cleaning. Contact contamination may be recognized by an increase in contact resistance and possible intermittent operation of the switch, especially in low power applications. Care must be taken not to submerge the switch in the solder bath or spray the switch during cleaning. The switch must be protected at all times to prevent contamination by flux or cleaning fluids.

Soldering and Cleaning MULTIMEC

MULTIMEC switches are fully sealed to IP-67M specifications to prevent solder flux and aqueous or solvent cleaning solutions from entering the switch and contaminating the contacts. The switches can be placed on the PC board with other components and wave soldered. No special handling of MULTIMEC switches is required, but notice the guidelines mentioned under "temperature".

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Soldering Multimec

Through hole versions

Hand soldering: Max 350°C for max. 3 s., this applies for both low temperature and high temp. versions.
Wave soldering: Heat built up in the switch during pre-heating and soldering must not exceed the maximum operating temperature of the switch. If, for some reason, a high pre-heating temperature is required, Mec strongly recommend using high temperature switches. In any cases peak temperature must not exceed 260°C, and soldering time is max. 10 s.

Surface Mount versions

For all methods - Infrared, convection and vapour phase - the upper limit 260°C/30 s. must be observed. The soldering temperature profile must have moderate temperature gradients $\Delta T/t$.

General Temperature limitations	
Low temperature	65°C
High temperature	160°C
LEDs	85/100°C
Accessories	65°C

Mec recommend that accessories are mounted after soldering, unless the process allows the heat exposure to be kept within the limits of 65°C. Combinations of high temperature switches with LED's will be limited by the temperature capability of the LED.

Packaging

UNIMEC and MULTIMEC switches are packed in rigid tubes of 50 pieces each.

How to Assemble Examples

