INTRODUCTION

The following instructions represent suggested guidelines for the mounting, soldering and cleaning of Measurement Specialties surface mount pressure sensors Model 1451 and Model 1471. They are intended to assist the customer in avoiding damage to the sensors during assembly. Measurement Specialties has not validated these guidelines experimentally and thus defers to the expertise of PCB design & assembly professionals. However, Measurement Specialties strongly recommends that the maximum temperature values shown in our product literature should not be exceeded or sensor failure may occur.

RECOMMENDED PAD LAYOUT
Mounting Instructions for SMT Pressure Sensors

PICK AND PLACE

- The sensors should be picked up by the sides of the lid as shown in the diagram below. Tube style units may be picked up using the tube.
- When mounting the sensors it is important to keep the gage hole on the bottom of the sensor open and un-obstructed. The venting hole in the PCB, recommended diameter .062 inches, should line up directly below the sensors gage hole and must also be open and un-obstructed. This is not an issue with absolute sensors that do not have a gage hole.

SOLDER PROCESS

The sensor pressure port must be sealed in order to use a wave solder processes. Any debris or contamination inside the package may cause sensor failure. Manual soldering can be done without sealing the units.

- Tube versions can be sealed with a small plastic cap that will survive the temperatures involved in the process. "Caplug" part # HVC-093-12, optional.
- Versions with a pressure port hole can be sealed with a piece of high temperature Polyimide film tape.
- It is recommended that versions with gel fill are hand soldered. Exposure to the high temperatures involved in wave soldering can burn the gel.
- The recommended lead free solder paste is Multicore 96SC LF318 AGS88.
- "No clean" flux must be used for soldering.
- The minimum solder connection height shall be 0.008"(0.2mm) per MIL-STD-2000A, Paragraph 4.23.5.
- When direct mounting on PCB, it is recommended to pass some tests with a temperature probe attached to the sensor to achieve the profile shown below.
- The sensor shall be soldered only one time. If a sensor has to be de-soldered, do not solder again.
RECOMMENDED SOLDERING PROFILE FOR MEASUREMENT SPECIALTIES
MODEL 1451 & 1471

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