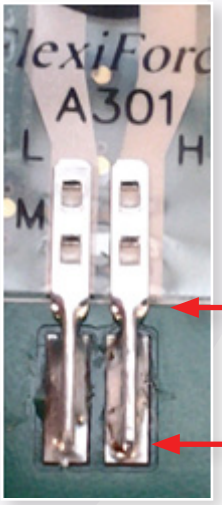
Considerations for Soldering FlexiForce® Sensors to PCB Solder Pads

Note: It is recommended that solder flux NOT be used when soldering FlexiForce sensors. The flux has a tendency to run and creep into the sensor via the crimped area of the pins. The flux can then penetrate the sensing area of the sensor via the air vent running down the middle of the sensor and result in an unusable sensor. In cases where flux is necessary, use as little as possible and take great care to ensure no flux gets on crimped area of pins.

1. Soldering iron tip diameter - 1.6mm (.063 in) or smaller
2. Solder temp: Lead-free solder: 850°F (454.4°C)
3. Tin solder pads, tin soldering iron tip
4. Solder sensor pin to tinned solder pad, applying solder/soldering iron for no more than 3 seconds at a time. If more time is needed to complete soldering, remove soldering iron from pin, allow sensor to cool for 5-7 seconds and reapply solder/soldering iron.

   a. An alligator clip may also be used to sink heat away from the sensor as shown on the right. This is beneficial in applications where it can be used, but not necessary.

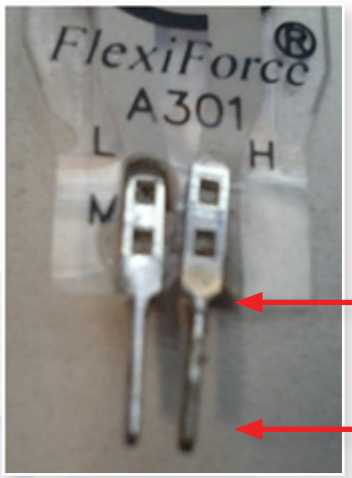
Example of properly soldered sensor:



No melting of substrate

Minimal/no charring on pin or pad

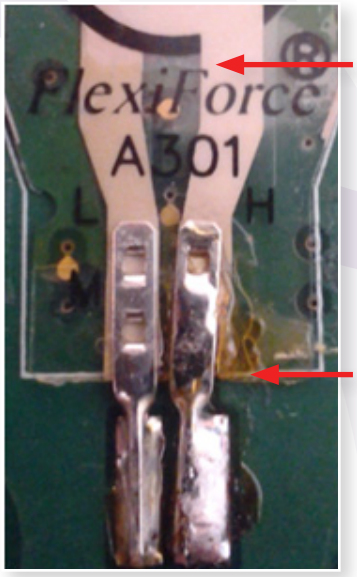
Example of damaged sensor due toover exposure to heat:



Melted/ charred substrate

Charred/ burned pins

Example of damaged sensor due to solder flux:



Discoloration of silver trace due to flux ingress

Flux inside substrate or in exposed silver area crimp

Procedure for Verifying Solder Technique

1. Place unsoldered sensor on PCB.
2. Use calibration loading fixture to apply 3-5 step up load, measuring resistance at each load. Precondition sensor with 3 or 4 loadings at max load before taking measurements.
3. Solder sensor to PCB.
4. Apply same preconditioning and loading profile to sensor, measuring resistance at each load.
5. Compare measurements before and after soldering. All values should be within 5% of each other for a given sensor.

Tekscan®

+1.617.464.4283 | 1.800.248.3669 | info@tekscan.com | www.tekscan.com/flexiforce