

Installation of Pt Sensors from Heraeus Sensor Technology GmbH

Handling

It should be ensured that the sensors are handled carefully when being mounted.

Crude gripping devices, metal pliers and clamps must not be used.

Plastic tweezers are recommended.

The leads should not be bent in the vicinity of the Pt thin-film sensor body.

Avoid frequent repositioning of the wires.

Connection techniques

Connect the sensors preferably by the **welding or soldering** methods. When choosing the connection technique, pay attention to the sensor wire material and the material to which it is to be connected.

We recommend welding for Ni or NiPt coated wire. For wires with a silver surface or gold-plated wires we recommend soft soldering.

No flux should remain on the wires or chips.

- **Laser welding:** This is the best connecting technique using a welding spot or parallel seam.
- **Crimping:** In order to avoid contact resistances high quality gas-tight crimping is recommended.
- **Ultrasonic welding:** Bend the leads away from the plane of the Pt thin-film sensor body to eliminate internal damage.
- **Brazing:** When brazing, ensure that the Pt thin-film sensor body is not heated beyond its maximum rated temperature. The brazing time should be less than 3 seconds.
- **Gluing and embedding:** The thermal expansion coefficients of the various materials used should be matched to one another to prevent mechanical stresses affecting the measurement. In particular the use of installation and embedding materials with material characteristics which are not adapted to those of the sensor materials may lead to erroneous measurement results or even to damage to the sensor. The embedding materials should be **chemically neutral**.
- **Spot welding/resistance welding:** This is a good connecting technique in which the two materials are welded by electrical current.

In use the installed sensor should never be mechanically stressed.

Length of connecting wires

The nominal resistance of the sensors is defined on the wire at 8 mm from the end of the body.

Shortening or extending the wires affects the measurement.

This applies particularly to low nominal resistances.

Storage

Pt thin-film sensors **must not** be subjected to corrosive and corroding media.

With some types special storage instructions must be followed.

The climate and variations in humidity have no effect on the measurement accuracy of measurement elements which are not installed.

Also when in storage, the sensors should be handled with great care and never bent nor treated roughly – then you avoid damaging the sensor before it is even used!

With sensor elements which, for example, are embedded in compound, it may be necessary with high relative humidity to dry out the sensors before use or installation.