

FLUOROPLASTIC SENSOR PROBES

Complete chemical resistance in temperature, capacitance, & magnetic applications

- + **Completely unaffected by chemicals & solvents**
- + **Temperature range from -200 to +260°C**
- + **Complete range of sizes from 1mm to 50mm diameter**
- + **Any length possible**
- + **Standard and custom designed constructions**
- + **Thermocouple, Platinum resistance or thermistor elements**
- + **Capacitance & magnetic proximity probes**



ADTECH FLUOROPLASTICS FEP PFA & PTFE

Fluoroplastics PTFE, FEP & PFA are some of the most inert materials known, as well as having very high temperature resistance for polymeric materials. This means that they are ideal materials for the protection of sensors in applications where highly corrosive or solvent conditions exist.

Fluoroplastics are relatively difficult materials to process, but by using a combination of moulding, shrinking, welding or spraying techniques, Adtech can cover any length or diameter of probe without damaging delicate sensor elements inside.

As it is often advantageous to include the sensor element in the probe, we offer a complete assembly service, sourcing all components where necessary.

The total chemical resistance offered by these probes make them attractive for universal applications, allowing stocking of only one type of probe that can be used for all environments. Our own Universal Temperature Probe is an example of this.

FABRICATED COVERINGS ON METAL PROBES

Probes made from steel or other metals are covered in a sheath of fluoroplastic with a minimum thickness of 1.0 mm (except 6 and 8 mm probes). The sheath is shrunk over the stem to ensure a tight fit and the exclusion of air from between the metal and the fluoroplastic and then the tip is closed by a compression moulding technique.

Where a flanged construction is specified the fluoroplastic flange is integrally machine welded and forms a sealing face, thus ensuring all wetted areas are covered.

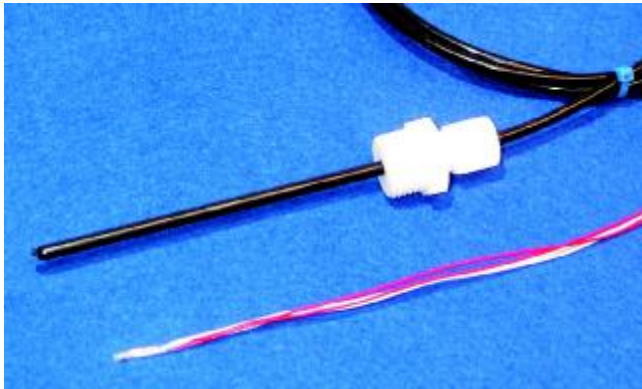
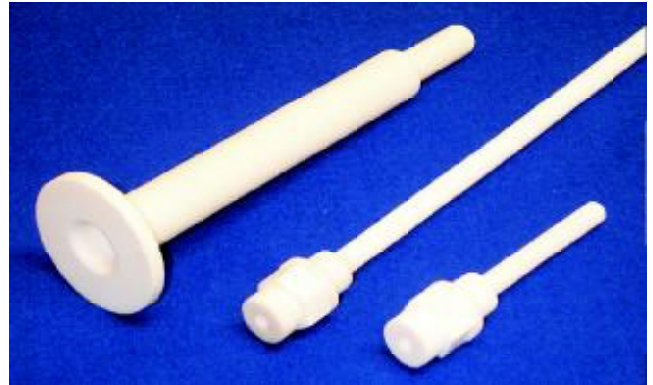
All assemblies are subjected to a high voltage spark test at 10 KV. to ensure integrity of the plastic construction.

We are able to coat most sizes this way, diameters from 3 mm to 25 mm are normal, but up to 100 mm diameter can be supplied for chemical plant use. Probes can be manufactured to any length, and if necessary the stem can be bent to shape after covering.

**SOLID PTFE
FABRICATED PROBES**

Manufactured from moulded, machined or welded PTFE without any metal internal support. Fittings supplied are threaded which allow connection to female threaded mounting points. If a flanged connector is required a PTFE flange can be supplied to suit, threaded to take the probe.

A major benefit from our PTFE welding technology is that any length of probe can be supplied. We welcome enquires for any design.

**SPRAY COATED PROBES
PFA, PVDF & E-CTFE**

For complex shapes and faster temperature response spray coatings offer an advantage.

Coatings produced in PVDF (Polyvinylidene fluoride) and E-CTFE (Halar) are from 0.4 to 1mm thick and depend upon the thickness of the metal substrate. PFA coatings are normally thinner - approximately 0.1 to 0.2mm. All are spark tested to 2KV.

All these coatings are subject to oven curing at temperatures above 300°C, therefore the probe and contents must be capable of withstanding this temperature.

Any free issue metal parts have to be prepared for coating. All corners must have a minimum of 1.5mm radius, welds must be ground smooth and have no inclusions or air pockets, also thin and thick metal sections should be avoided on the same component

**SENSOR PROBES PTFE, FEP or PFA
ENCAPSULATED**

Where small diameter or flexible temperature probes are needed in hostile conditions, we have developed a range of temperature probes with the sensor element encapsulated in the tip. Sensor elements as standard are 2 or 4 wire platinum resistance or Type K thermocouple. Alternative sensors including thermistors, other thermocouples types etc. are available to special order. These probes can be supplied to any length, and for simplicity of insertion and connection to equipment, a PTFE sliding gland fitting is available. If necessary a fitting or sealing flange can be moulded in place anywhere along the length of the probe where a gland type fitting cannot be used.

