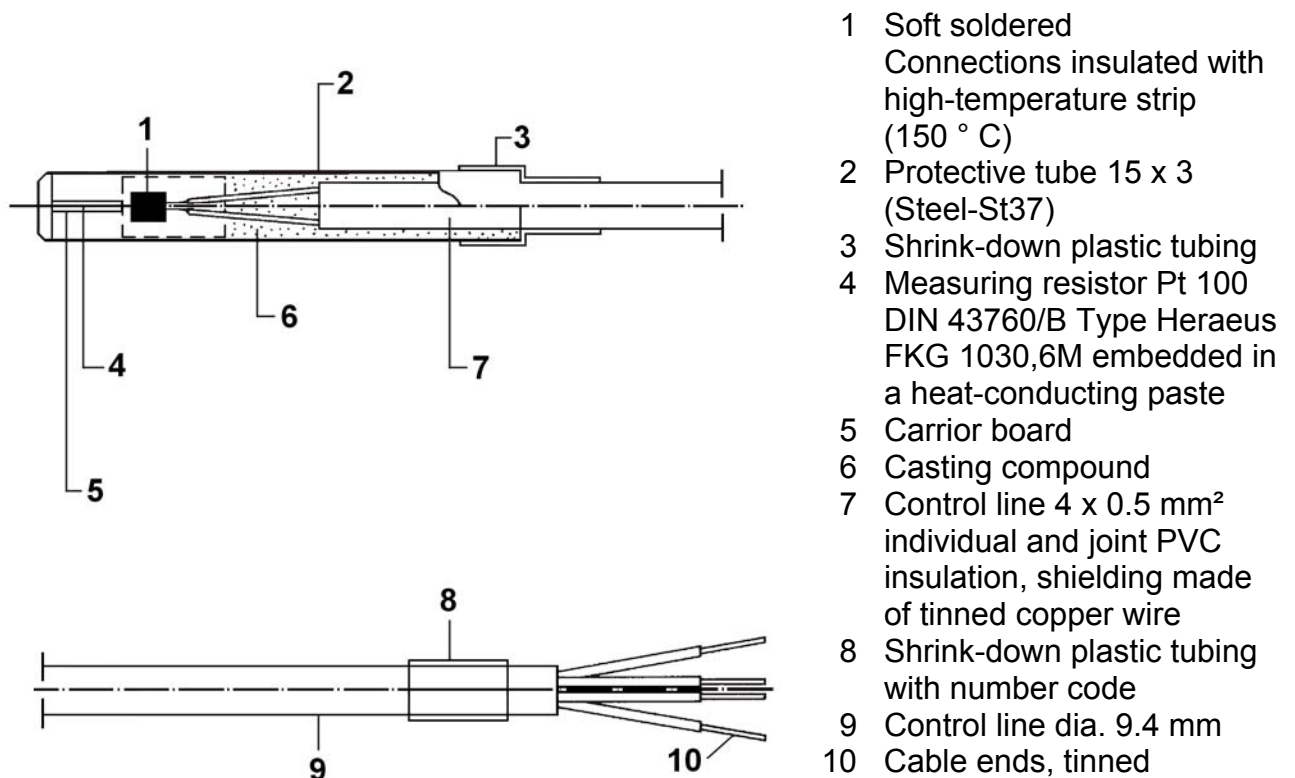




The design of temperature sensors mostly used to measure temperatures at instruments is illustrated in Fig. 1. These temperature sensors consist essentially of a Pt 100 platinum resistor Type FKG 1030,6 M from the Heraeus company and are suitable for temperatures of up to 500 ° C. Temperatures at extensometers, inclinometers and stress transducers are not allowed to exceed 80 ° C because of the materials used; therefore this type of temperature sensor is generally not expected to measure higher temperatures and is only designed for temperatures of up to 150 ° C. The fundamental values in ohms from 1 to 1 ° C for a platinum resistance thermometer Pt 100 in accordance with DIN IEC 751 are listed in the following table. All temperature sensors undergo a function test after being wired up. This consists of dipping them in icy water and checking whether the resistance equals 100 Ω as quoted in the manufacturer's specifications.



- 1 Soft soldered Connections insulated with high-temperature strip (150 ° C)
- 2 Protective tube 15 x 3 (Steel-St37)
- 3 Shrink-down plastic tubing
- 4 Measuring resistor Pt 100 DIN 43760/B Type Heraeus FKG 1030,6M embedded in a heat-conducting paste
- 5 Carrier board
- 6 Casting compound
- 7 Control line 4 x 0.5 mm² individual and joint PVC insulation, shielding made of tinned copper wire
- 8 Shrink-down plastic tubing with number code
- 9 Control line dia. 9.4 mm
- 10 Cable ends, tinned

Fig. 1 Design of the Pt 100 resistance thermometer