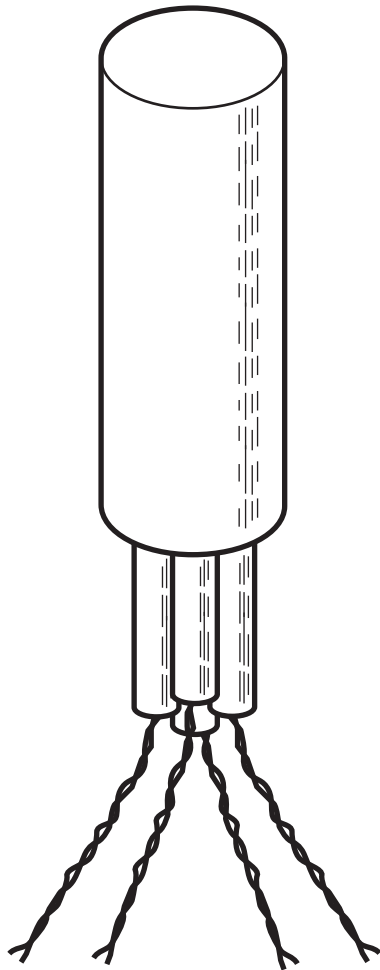


Outside View



Inside View

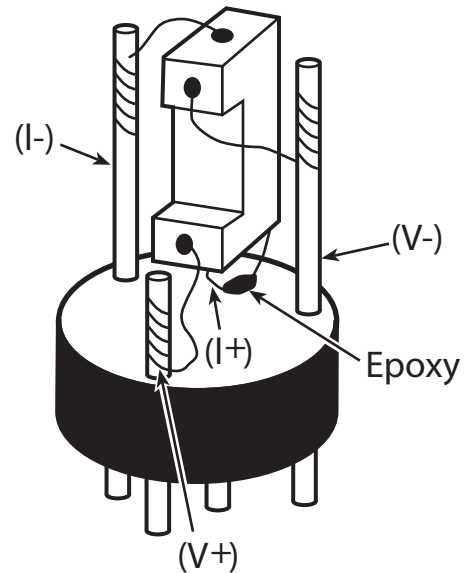


FIG. 5.18. Typical strain-free mounting for carbon-glass and germanium resistance thermometers (from Lake Shore Cryotronics, 2002). For the carbon-glass resistance thermometer, the sensor base is supported by wires epoxied to the base, as shown. For the germanium wires, the sensor base is epoxied directly to the package base. Both types of thermometers are sealed in a helium atmosphere, but at low temperatures, up to 70 % of the thermal contact to the sensor occurs through the leads. The strain-free mounting scheme makes these thermometers very fragile; dropping a carbon-glass thermometer only a few centimeters can change its temperature response. The strain-free mounting also increases the thermal response time considerably. When soldering these thermometers into a cryostat, the sensing element is easily damaged by overheating the leads. So be careful with this type of thermometer if you have invested a lot in calibration.