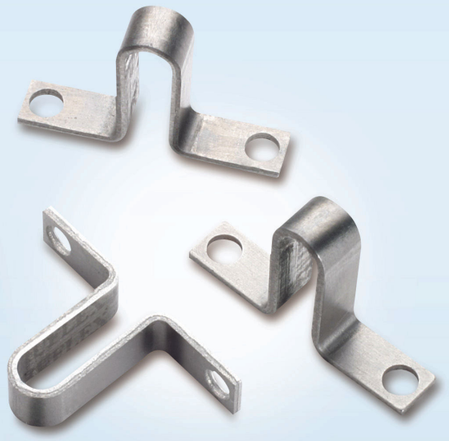
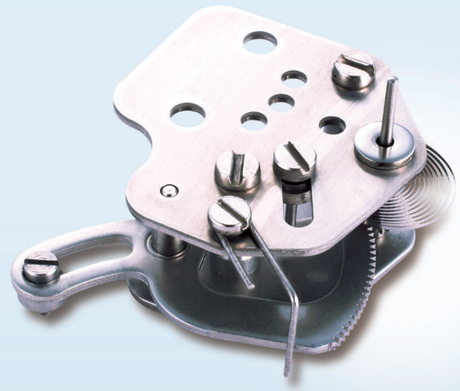
Gas density monitors with local indicator and alarm contacts

Gas density monitors with local indicator and alarm contacts combine the indicator and switching function. Each gas density monitor is adjusted individually to its calibration pressure. In order to define the bimetal compensation exactly, ENERGIE uses a computer-controlled adjustment machine. Apart from considering the calibration pressure this machine also takes into account the different factors influencing the instrument, for example, the bourdon tube and the characteristic data of the bimetal used for temperature compensation. The class accuracy is +/- 2.5% within the temperature range -20C ... 60C. The switching accuracy is +/- 2.5%. The information concerning the switching accuracy refers to the calibration pressure.





Deviation from the reference isochore

All accuracy details refer to the reference isochore for bimetal-compensated gas density controllers. The SF6 gas temperature characteristic reveals there are correspondingly different gradients at various pressures. Due to this fact there is a reference isochore error as well as the deviation from the reference isochore. The magnitude depends on the different gradients of the pressure characteristic.

Gas mixtures SF6 / N2

Gas density monitors can be designed for gas mixtures for use in cold climatic regions. These can also be designed and built for special mixtures used in gas-insulated lines.

Computer aided calibration

Computer aided calibration is the key to the optimal design of density monitors. ENERGIE offers high precision in meeting maximum demands in switchgear reliability. ENERGIE provides the concept to achieve measuring accuracy in individual measuring systems.

The tube behaviour is measured in each measuring system. The kinematics can be designed optimally with exact knowledge of the measuring element characteristics. Inaddition to this the different assemblies are then carefully tested. Switching accuracies up to 2.5% are possible by combining computer aided calibration with intensive testing and the use of high quality materials.

Definition of essential terms

Filling pressure

Nominal system pressure of the monitored SF6 gas tank at +20C. This information is required to dimension the pressure measuring element where mechanical gas density monitors are concerned (overload limit).

Temperature compensation

The temperature compensation of the gas density monitor effectively corresponds with its isochore when SF6 pressureis at 20 C.

Switching point

The switching point defines the adjusted switching pressure of the contact at SF6 gas temperature +20 C.