Meteo M&R

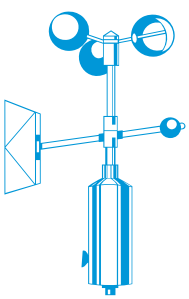
air pressure

barometer model 103

ANEROID PRECISION BAROMETER

MEASUREMENT OF ABSOLUTE ATMOSPHERIC PRESSURE

Precision aneroid barometers are used for measuring the absolute atmospheric pressure. The self-stable set of five aneroid capsules, used in our precision aneroid barometers, is made of a corrosion proof copper-beryllium-alloy.



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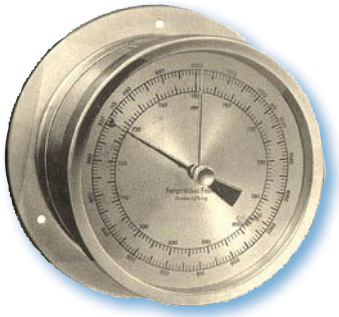
scientific and meteorological instruments

Aneroid precision barometer model 103

measurement of absolute atmospheric pressure

Precision aneroid barometers are used for measuring the absolute atmospheric pressure. The self-stable set of five aneroid capsules, used in our precision aneroid barometers, is made of a corrosion proof copper-beryllium-alloy. This alloy has been well established for measuring the atmospheric pressure since many years because of its remarkable elastic properties. The aneroid capsules are nearly free of age-hardening, hysteresis and elastic after-effects.

The influence of temperature on the set of aneroid capsules and the transmission system is compensated by a bimetal over the whole measuring range and for temperatures between -30 to +40 °C. The motion of the aneroid capsule is transmitted to the axle of the pointer by driving a segment and wheel with an excellent fine finish of the gearing. All bearings have an excellent fine finish. The instrument has a minimum of idle friction because of the optimal shape of the levers and bearings.



made to measure

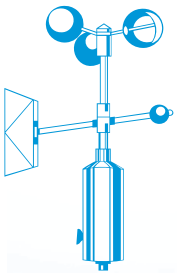
TECHNICAL SPECIFICATIONS

Measuring range	680..800 mmHG	900..1060 hPa
Precision	±0,5 mmHg	±0,7 hPa

model 103 with screw on flange	
Diameter	135 mm
Height	90 mm
Weight	540 mm
Diameter flange	165 mm

What is air pressure?
Air stays with the earth by gravity. This force gives air weight (mass x force). Air pressure is the weight of the pile of air above one square meter surface. Close to the surface of the earth the air mass is approx. 1,2kg/ m^3, higher in the air this density decreases. On the surface of the earth the pressure is approx. 1000 hPa. 99% of our air is located in a layer of approx. 30 km thick. On the surface 30 km air presses on 1 m^2. For an air pressure of 1000 hPa that means the average air density is not more than 0,3 kg/m^3 (pressure = force / surface and force is mass*gravity increasing).

How does an aneroid barometer works?
Air pressure is measured with the aneroid barometer. De barometer contains several vacuous boxes which will be more or less pushed in. With a spring and an indicator this variables can be displayed (barometer) or recorded on paper through a pen system (barograph). For control purposes you can compare the readings of your barometer or barograph with surrounding weather stations. The best check of your instrument you can do when there's a high-pressure area above your country with minimal pressure differences between locations.



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