

Instruction for Use

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Microbarograph

3.0810.20.000



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1 Models available

Order-No.	Measuring range	Graduation	Recording Time
3.0810.20.000	965...1052 hPa	1 hPa	1 day / 7 days, adjustable

2 Application

The barograph measures and records the air pressure of the atmosphere of the surroundings. The recording drum is driven with utmost precision either by a manual spring clockwork mechanism or a battery-operated quartz clockwork.

Due to its remarkably high sensitivity it is possible to record even the slightest fluctuation in air pressure. A change in air pressure of 1 hPa corresponds to 1,88 mm run on the recording chart so that a change in pressure of 0,2 hPa is perfectly readable.

The barograph is set to the air pressure reduced to sea level by the manufacturer, (qff) taking the on-site elevation indicated by the user into consideration and it displays this value. This guarantees that the instrument is operational at the indicated elevation. (If no elevation has been given by the user, then the instrument is set at the factory to the absolute air pressure.

The exact measurement and continuous control of the air pressure is important especially for weather stations and weather forecast.

Remark: For transportation of the instrument in higher areas the following has to be considered:

- remove the transmission strip under the pressure case
- up to a height of 4000 m transportation without pressure compensation
- above 4000 m transportation only in a pressurised cabin

3 Set-up and Mode of Operation

The clockwork and the column with the aneroid-capsules are mounted to a base plate. The instrument is protected by a tiltable transparent hood with a viewing window.

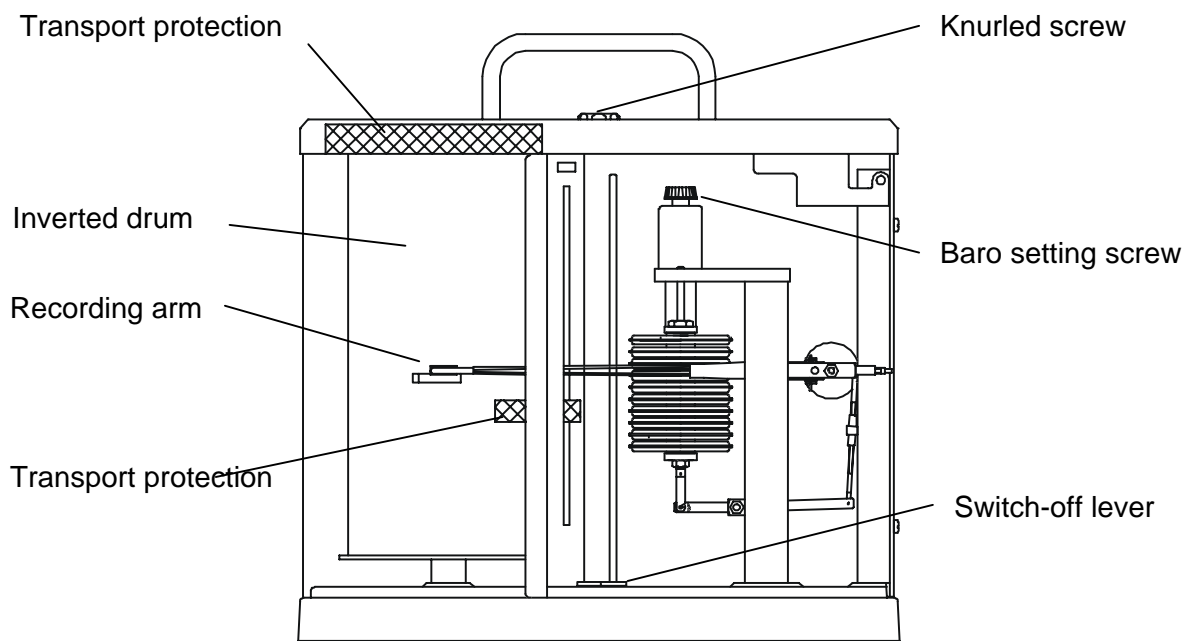
Two sets of 10 copper beryllium aneroid capsules serves as the measuring element, which changes its length with air pressure fluctuations. A system of levers transfer the changes in length of the measuring elements onto the recording arm which has been provided with felt-tipped pen.

The user can set the instrument to the on-site elevation by means of the baro setting-screw and a scale above the aneroid capsules.

A time-controlled registration is possible through the drum rotation.

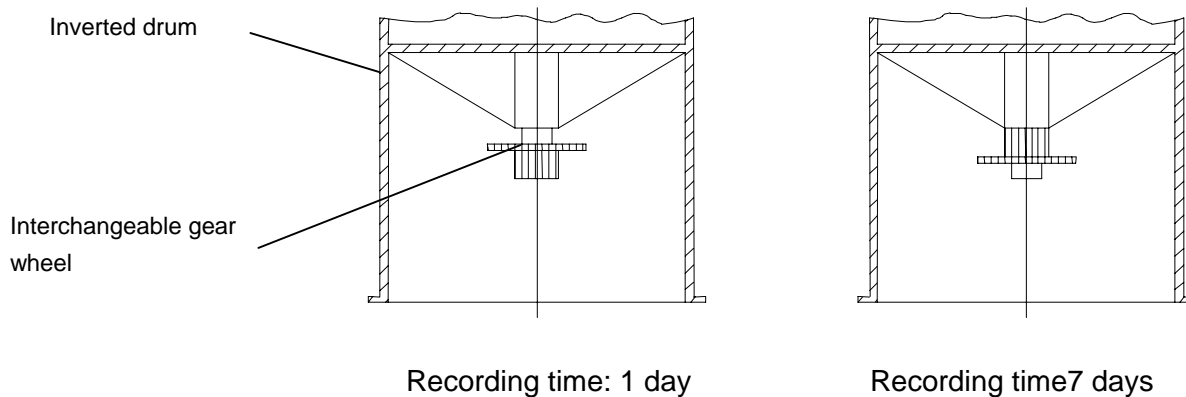
4 Preparation for Use

- 1.) Open the cover of the instrument by pressing the catch and remove the foam piece transport protection from the cover. Press the switch-off lever to the left so that the recording pens swing off the recording strip.

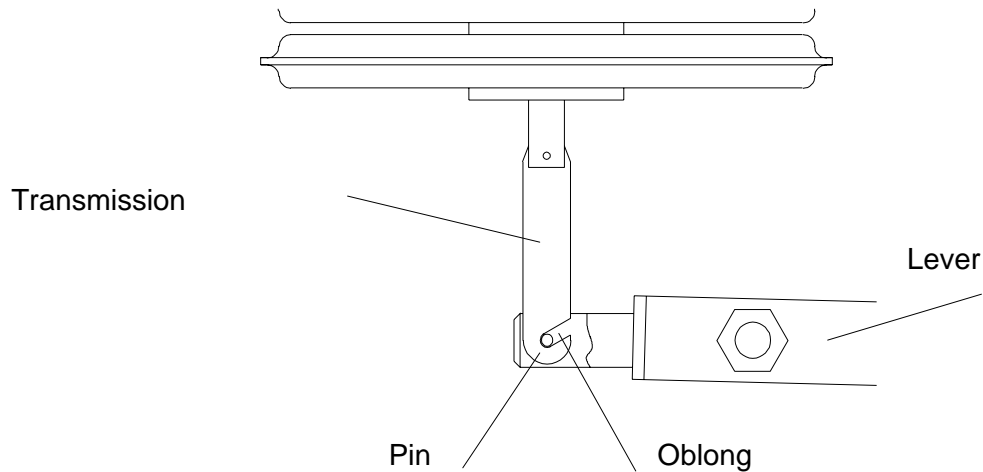


- 2.) Setting the desired recording time

For instruments with a spring clockwork mechanism, unscrew the winding key by turning it towards the right and remove the inverted drum from the drive mechanism. The desired recording time can be set by changing the interchangeable gear wheel on the drum.



- 3.) Clamp the recording chart onto the drum (see chapter 6.1), afterwards insert the drum with the recording chart onto the driving mechanism until it stops!
- 4.) Remove the piece of foam plastic (transport safety device) from the recording arm.
Please see to it that the connection (connecting element) and the deflection lever below the aneroid capsules are in function, as given below. If necessary, lift the recording arm and fit the pin into the long hole.

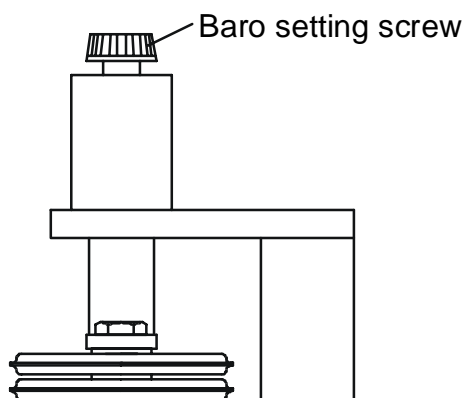


- 5.) Remove the tip protection from the recording pen.
- 6.) Wind-up the clock work by rotating the key (located in the drum) to the left, and then turn the drum contra-clockwise to the real time.
- 7.) Secure the cover again to the base of the instrument, and press the switch-off lever to the right until it stops, so that the recording pens will be lowered onto the recording strip.

5 Adjusting the Instrument

Atmospheric pressure is dependent on the elevation of the mounting site above sea level (over normal zero). In order to be able to compare the measured values obtained at different sites, the barograph must be set to the respective height at the site where it is to be mounted. If this was not done at the time of ordering or if the mounting site has been changed, then the instrument must be reset to the correct elevation. A reference instrument is required for this. Or you can ask a neighbouring weather station for the air pressure reduced to sea level (reference value).

Turn the baro setting screw for setting the recording arm of the barograph to the actual reference value.



6 Maintenance

6.1 Changing the recording strip

This should be done regularly at the time where the recording strip starts; for example if you are using a 7 day recording period, then change the strip every Monday morning. After swinging the recording arm forwards, raise the chart holder and remove the recording strip. Place the new recording strip onto the drum and fix it into position by inserting the chart holder. Make sure that the new recording strip fits snugly and smoothly against the lower edge of the drum. Rewind the clockwork mechanism every time you change the recording strip. Swing the recording arms back to their original position and rotate the drum counter clockwise to the correct time. The instrument is now ready for use.

Recording Strips (1 set = 100 sheets), order-no. key

Meas. range	Recording time / Order No.	
	1 day	7 days
965-1050hPa	205188	205187

6.2 Changing the recording pens

Remove the recording pens carefully from the recording arms. Remove the tip protection from the new pen. Make sure that you do not touch the recording tip when you place the new pen into position.

Spare Recording pens (minimum order of 6) Order-No. 500 847

6.3 Checking and resetting the air pressure

As already described in point 2 „ Application“ , when the elevation is not known, the Meteorograph is set such that it indicates the air pressure at the measuring site. If you want this instrument to indicate the air pressure reduced to sea level, then you will have to reset it ! A change in elevation of 10 meters changes the air pressure by 1,2 hPa. The instrument must also be reset if the site of an instrument indicating air pressure reduced to sea level is changed.

Setting process:

1. First determine the current prevailing air pressure at the site P_{qfe} , for example, with the aid of a mercury barometer
2. Then determine elevation Z
3. Calculate the air pressure P_{qff} reduced to sea level.

$$P_{qff} = P_z + P_{gfe} = \frac{Z_m}{10m} \times 1,2 \text{ hPa} + P_{gfe}$$

Example:

Site : Nurenberg
Elevation Z : 309 m
Air pressure P_{qfe} : 920,3 hPa (mercury barometer)

$$P_{qff} = \frac{309 \text{ m}}{10 \text{ m}} \times 1,2 \text{ hPa} + 920,3 \text{ hPa} = \underline{957,38 \text{ hPa}}$$

The instrument must be set to this value. Figure see chapter 5

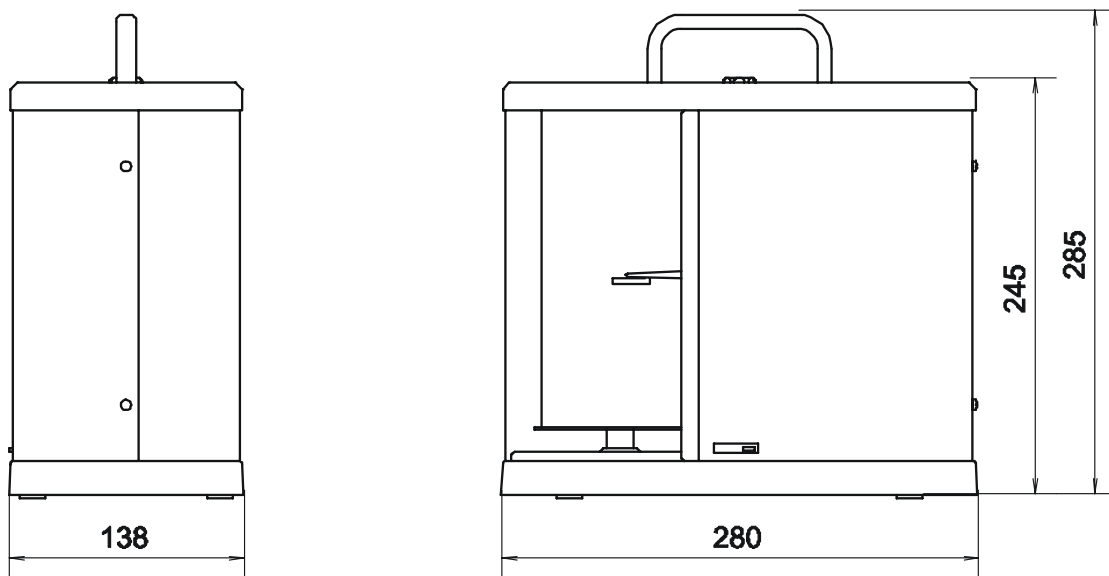
For your information:

The telephone service of the Weather Service will be happy to give you the air pressure reduced to sea level. If you make use of this service, then you won't have to carry out the above calculation.

7 Technical Data

Measuring range	965...1050 hPa
Measurement accuracy	$\pm 0,3$ hPa + 1 scale division @ 65% rel. h. and room temperature
Measuring element	2 Set of Aneroid- Capsules, temperature- compensated
Above sea level	0...2000 m, adjustable
Recording width	160 mm
Graduation	1 hPa
Clockwork	Spring clockwork mechanism
Recording time	1 day / 7 days resp.
Thrust	11.45 mm/h.; 40.01 mm/day resp.
Temperature range	-35 ... +80°C
Gear accuracy	± 60 s/day at 20°C acc. to DIN 8300
Ambient Temperature	-10...+45°C
Weight	3 kg

8 Scale Drawing



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