

# Barometer GB1



The barometer GB1 is a precision pressure measuring instrument for meteorological applications. Its special features include:

- Contact free measurement of the displacement of the aneroid capsule which is constructed from a special steel alloy.
- All sensitive parts of the sensor are built into a die cast aluminium housing. This housing is kept at constant temperature by an electronically controlled heater.
- The microcomputer gives a linear response throughout the whole range 630.0...1060.0 hPa. Digital four figure liquid crystal display.
- Various operation modes are already incorporated into the standard version to allow simple adaptation to specific user requirements.
- Digital electrical outputs (dc analog output optional).

The standard version comprises the barometer sensor, the microcomputer unit including the LCD-display and an interface circuit with optocoupler separated inputs and outputs. The barometer can operate in both continuous and interrogation modes (depending on mode selected). According to mode, the instrument supplies either the absolute pressure or the deviation of the pressure from a given reference pressure. The pressure unit is airtight and can therefore be connected by tube to the room in which pressure is to be measured. The power comes from a 12 VDC power supply and should be applied continuously.

The following optional extras are available:

- 230 VAC power adapter
- Analog output:  $\pm 1$  V for  $\pm 100$  hPa, resolution 0.1 hPa
- We are always willing to make special modifications.

## Technical Data

Measuring range	630...1060 hPa	Power requirements with heating at 20°C	appr. 100 mA
Hysteresis	< 0.03 hPa	Power requirements without heating	approx. 20 mA
Resolution (digital mode)	< 0.03 hPa	Heat output after switching on	approx. 2 W
Absolute accuracy with heating over the whole temperature and voltage ranges	± 0.2 hPa	Time required to attain temperature stability	approx. 2 hr
Temperature range	- 10...+35°C	Duration of measuring cycle	3...4 s
Supply voltage	+ 12 V/± 20%	interfacing (connector D-Sub 25-pin pos.)	

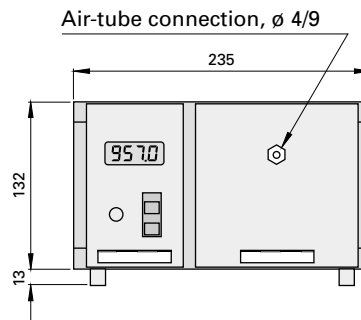
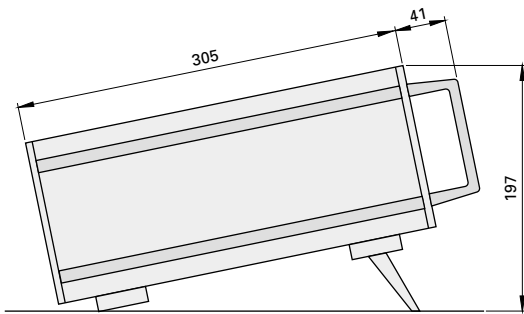
### Digital

Input (interrogation):	
Quiescent "0"	< 10 µA
Interrogation "1"	> 1 mA
Input voltage for "1"	3...20 V
Input impedance	> 1 kΩ
Minimum pulse length	100 µs
Output (data return):	
Optocoupler output voltage (transistor off)	≤ 20 V
Dielectric withstand proof voltage	1000 VAC
Weight	approx. 4.9 kg
Voltage reduction at 1 mA	< 1.5 V
Impedance	> 1 kΩ

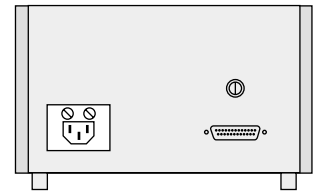
### Analog

For ± 100 hPa	± 1 V
Resolution	0,1 hPa
Possible carrier modes:	
Code:	
In the form of an impulse string (e.g. 9500 for 950.0 hPa)	
Binary 13 bit	
BCD 4x4 bit	
ASCII 4x8 bit	
Carrier mode:	
2-wire (clock and data signal)	
1-wire (start/stop principle)	
Baud rate 50/110/2400/9600 Bd,	
Other speeds available on request	

## Dimensions



230-VAC-Version



all measurements in mm

## Details for ordering

Barometer GB1 for 12 VDC operation

## Options

- Power supply 230 VAC
- Analog DC output

meteolabor reserves the right to make changes without further notice

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