Original Instruction Manual for AD 1000 / BA 1000 Absolute Pressure Transmitter

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Revision overview

Version:	Date:	Author:	Amendments:
A	04/2012	Re	Initial Revision
B	04/2017	Me	Formula for reduction
C	01/2018	Me	Decl. of conformity; Technical drawing
D	12/2022	Me	Update technical data, Revision Overview; QR-Code

The instruction manual is part of the product. Please read this manual carefully, follow our instructions, and pay special attention to the safety information provided. This instruction manual should be available at all times. Please contact the manufacturer if you do not understand any part of the instructions.

The manufacturer reserves the right to continue developing this device model without documenting such development in each individual case. The manufacturer will be happy to determine whether this manual is up-to-date.

Purpose of instruction manual

This instruction manual describes the features of the AD 1000 absolute pressure transmitter / BA 1000 barometer and provides guidelines for its use.

Improper use of these instruments or failure to follow these instructions may cause injury or equipment damage. Every person who uses this device must therefore read the manual and understand the possible risks. The instruction manual, and in particular the safety precautions contained therein, must be followed carefully. **Contact the manufacturer if you do not understand any part of this instruction manual.**

Handle this manual with care:

- It must be readily available throughout the lifecycle of the instrument.
- It must be provided to any individuals who assume responsibility for operating the instrument at a later date.
- It must include any supplementary materials provided by the manufacturer.

Conformity

This device is state of the art.
It complies with the statutory requirements of the EC and UK-directives.
This is documented by the CE and the UKCA mark being affixed.

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1 Safety precautions

1.1 Appropriate use

The AD 1000 absolute pressure transmitter / BA 1000 barometer is designed for displaying atmospheric pressure and absolute pressure in such areas as weather stations and airports.

Always observe the operating requirements—particularly the permissible supply voltage—indicated on the rating plate and in the “Technical data” section of this manual.

The instrument may only be handled as indicated in this manual. Modifications to the instrument are prohibited. The manufacturer is not liable for damages caused by improper use or failure to follow these instructions. Violations of this type render all warranty claims null and void.

1.2 Shipping, assembly, electrical connections and start-up

Do not close the pressure input ports when shipping, as changes in barometric pressure could damage instruments with low measuring ranges.

Only technical personnel who are appropriately trained and authorized by the operator of the facility may assemble the instrument and set up its electrical connections.

The instrument may only be operated by appropriately trained individuals who have been authorized by the operator of the facility.

Pressurized air or breath is not to be used for performance tests, as this could damage instruments with low measurement ranges.

Measurement errors may occur if the instrument is not kept protected from sunlight.

Specific safety precautions are given in individual sections of this manual.

1.3 Troubleshooting, maintenance, repairs, disposal

The individual responsible for the electrical connections must be notified immediately if the instrument is damaged or if errors occur.

This individual must take the instrument out of service until the error has been corrected and ensure that it cannot be used unintentionally.

Always unplug the power cord before opening the instrument!

This instrument requires no maintenance.

Only the manufacturer may perform repairs that require the housing to be opened.

The electronic components of the instrument contain materials that can be reused.
For this reason the instrument must be recycled in accordance with the environmental guidelines of the jurisdiction in question once it has been taken permanently out of service.

1.4 Symbols

The symbols given below are used throughout this manual to indicate instances when improper operation could result in the following hazards:

WARNING! This warns you of a potential hazard that could lead to bodily injury up to and including death if the corresponding instructions are not followed.

CAUTION! This warns you of a potential hazard that could lead to significant property damage if corresponding instructions are not followed.

INFORMATION! This indicates that the corresponding information is important for operating the instrument properly.

2 Instrument description

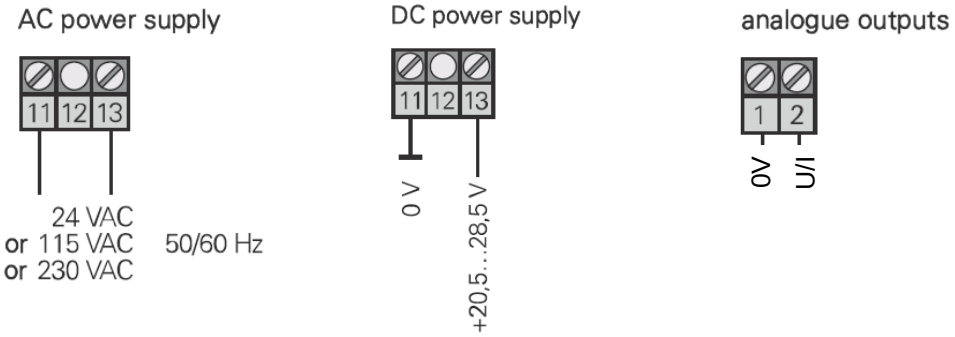
The AD 1000 absolute pressure transmitter / BA 1000 barometer is designed for displaying atmospheric pressure and absolute pressure in such areas as weather stations and airports. At the heart of the unit is an evacuated CuBe chamber that contracts in proportion to barometric pressure. An inductive displacement transducer measures the movement of the chamber without making contact. The pressure port is led through in the AD 1000.

3 Start-up

3.1 Features

Although the AD 1000 absolute pressure transmitter / BA 1000 barometer is highly robust, it is nevertheless a precision instrument and should be handled with care. Avoid mounting the AD 1000 / BA 1000 in the direct vicinity of any sources of heat or radiation. Ideally, the instrument should be mounted vertically (pressure and vacuum ports should be pointing down) and on a wall not subject to vibration.

3.2 Electrical instrument connections:



Observe the required supply voltage (see rating plate)

The pressure transmitter is protected against reverse polarity of the supply voltage.
The signal output is protected against short circuits for a short period.

4 Technical data

Measurement data	
measurement ranges	AD 1000: 0… 50 kPa 0…100 kPa 80…120 kPa 90…110 kPa 100… 0 kPa BA1000: 80…120 kPa 85…115 kPa 90…110 kPa 95…115 kPa
Measurement accuracy (setting limiting value)	±1 % of measurement range reference ± 0.5 hPa with respect to sea level
Temperature coefficient span	0.04%/ K (within the +10°C...+60 °C range)
calibration temperature	+22 °C ± 4 K
Signal stability	0.3 hPa / year
Ambient conditions	
medium	air, all non-aggressive gases
operating temperature	+10° C to +60° C
storage temperature	-10° C to +70° C
relative humidity	0…80 %
certificates	CE / UKCA (upon request)
Electrical data	
power consumption	max. 3 VA
supply voltage	230 VAC ±10 %, 50/60 Hz 115 VAC ±10 %, 50/60 Hz 24 VDC +20 % -15 % 24 VAC ±10 %, 50/60 Hz
output signal	0 to 10 V, 0 to 20 mA or 4 to 20 mA
minimum load resistance R_L	$R_L \geq 2$ kΩ for an output voltage of 0...10 V maximum effect of load resistance = 0.3%
maximum output load R_B	$R_B \leq 500$ Ω for current output output load dependence: < 0.3 %
reduction	0…850 m above sea level acc. to DIN ISO 2533:1979-12 $p = p_b \exp[-g_n R^{-1} T^{-1} (H - H_b)]$

Physical data	
pressure port	Ø 6.5 mm for NW6 tubing
electrical connection	screw terminals for cables up to 2.5 mm^2 2x PG 7 or 2x PG 11 cable glands
mounting orientation	vertical (if horizontal, use potentiometer 0 to reset)
dimensions (w x h x d)	151 x 80 x 73 mm 122 x 120 x 75 mm (option with display)
protection class	BA1000: IP53; AD1000: IP54
weight	0.6 kg
options	• factory calibration • calibration according to DKD-R 6-1 • 3½ digit LCD

Appendix A: Parts in contact with measurement medium

- Beryllium bronze CuBe2
- Brass CuZn39Pb3
- KEL (FPM: fluorinated rubber)
- Crastin (PTBP)
- Loctite 242e
- Araldite CY236 / HY988
- Carbonyl iron
- Viton (tubing)
- UHU-Plus endfest 300 binder

For more information on our measurement technology products, please visit our homepage at

www.halstrup-walcher.de/en/products/measurement-technology/

5 Certificate of conformity

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CE

EU-Konformitätserklärung
EU Declaration of Conformity

Company **halstrup-walcher GmbH, Stegener Str. 10, 79199 Kirchzarten**
erklärt als Hersteller in alleiniger Verantwortung, dass das Produkt
declares as manufacturer under sole responsibility, that the product

Product **Absolutdruck-Messumformer** **AD1000 / BA1000**
Absolute Pressure Transmitter

Regulations den folgenden Europäischen Richtlinien entspricht:
conforms to following European Directives:

LVD	2014/35/EU
EMC	2014/30/EU
RoHS	2011/65/EU

Standards angewandte harmonisierte Normen:
applied harmonized standards:

EN 61010-1:2010 +A1:2019
EN IEC 61000-6-2:2019
EN IEC 63000:2018

Declaration EU Konformitätserklärung ausgestellt von
EC Type Examination Certificate issued by

Geschäftsführer Managing Director

Kirchzarten, 17. Nov. 2022

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Notes: