

Features

- 8 channels
- 8 input connectors
- 5B compatible
- 7 direct switches
- 5¼" x 2" aluminium chassis
- registered for utility-model patent

Applications

- for all 5B modules
- can be integrated in PC
- stand-alone in connection with a measuring device



The amplifier chassis is equipped with eight 5-pin input connectors.

The power supply is

... 5V or 9-40V DC ...

The pin assignment of the module backplane incorporated in the **AAB-II** corresponds with those of the 5B modules of Burr-Brown and Analog Devices, Inc., however, an additional 0EXC pin has been introduced. Due to the electrical isolation of the modules, hum- and ground loops - often inevitable in large measuring set-ups - can be avoided.

Measurements can be effected on various potentials. The potential deviations, however, should not exceed 60V DC (acc. to VDE, Association of German Electrical Engineers). The outputs share the same output ground potential.

Optionally available is a cable kit **AAB-II-KAPC** for the internal PC-cabling of the **AAB-II** and various power supplies depending on the load.

The **AAB-II** (Analog Amplifier Box) is an analog amplifier housing accommodating

... eight 5B modules ...

The wide range of 5B modules provides for the solution of most specific measuring tasks. The 5B modules allow

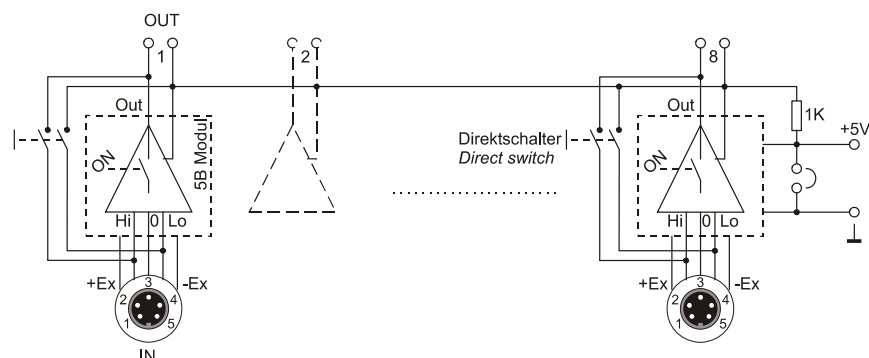
... potential free measurement ...

which is essential for many applications. When incorporated in two

... 5 ¼" bays of a PC ...

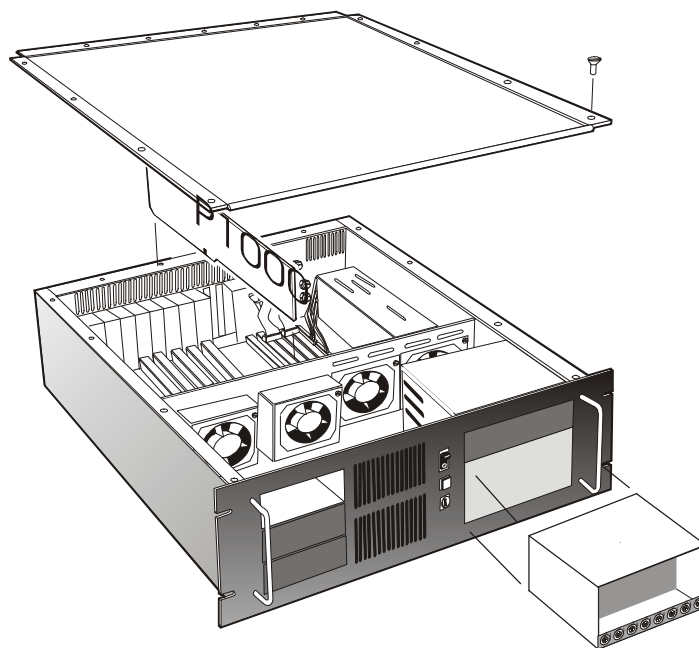
and connected to a PC-measuring card, the **AAB-II** represents a powerful instrument for the acquisition of measured data. When combined with a USB data acquisition system from BMC Messsysteme GmbH, for example, the **AAB-II** serves as a mobile measuring system which can be used with any laptop. It can also be used as a standalone auxiliary device for measuring devices of all kinds.

1 Block diagram



2 Mounting into a PC

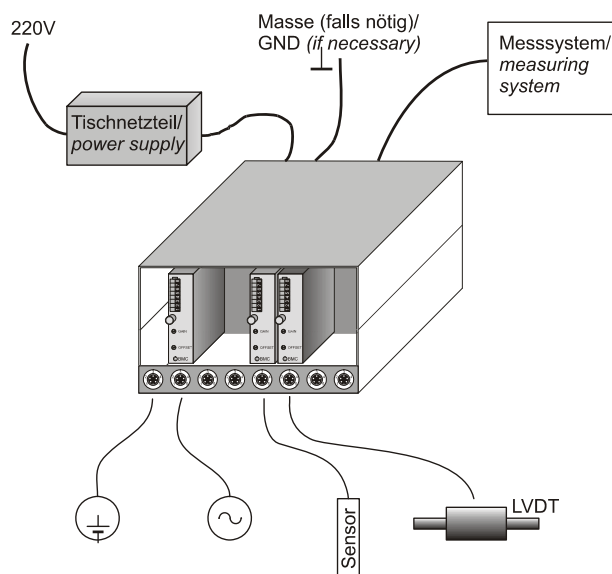
- Open PC chassis, clear two 5 ¼" bays.
- Attach the **AAB-II** using the supplied screws (if necessary, bend back the obsolete brackets in the bay). Remove the **rear screws on top** of both side walls and use them for attachment.
- Connect to the PC power unit.
- Connect analog output of the **AAB-II** to PC-measuring card.
- Grounding is provided via the metallic parts connecting **AAB-II** and PC.
- Switch on **AAB-II** (I =ON).



Unplug power cable before un-/ installing!

3 Standalone operation

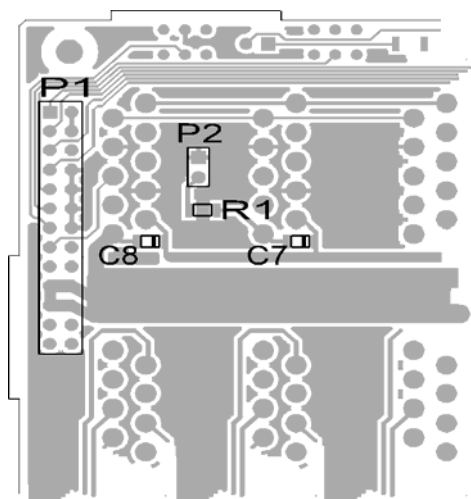
- Set-up components according to the figure on the left.
- Additional grounding to enhance shielding is recommended but not mandatory.
- Connect desktop power unit at 1A max. Sum up the individual currents of the modules in use in order to avoid an overload of the power unit.
- Alternatively, the **AAB-II** can be supplied by a DC voltage source with 5V / 1.5A. Check for proper poling (refer to pin assignment of DC connector)! Use a supply cable with a cross sectional area greater 1mm².



Unplug power cable before installing/uninstalling!

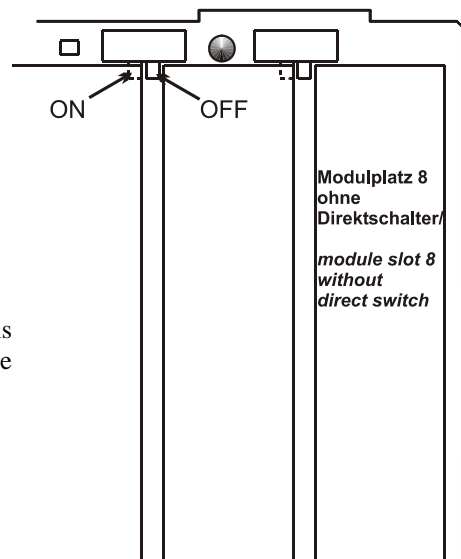
4 Connection of analog signals

Depending on the application, the shield of the analog input cables can be applied to ground (GND) or 0V. Be sure to connect to one end of the cable only. Run the signal ground separately, if possible. Always lay input cables separately. In case of short distances, the output cable can be laid with the same signal ground and shield (long distances may lead to cross talk).



5 Ground-to-ground resistance

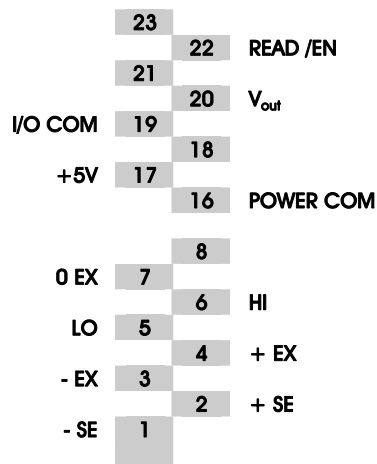
This is required, when the output ground is not electrically connected with the power ground. If Jumper **P2** (located on the back of the module backplane – for access remove rear wall of the **ABB-II**) is closed or soldered on the face, the output switches of the module are switched through. In the case of electrically connected systems (e.g. PC), this jumper represents a high-resistance (1kΩ) bridge and may generate a hum loop.



6 Direct switch

the direct switch bridges the relevant module location. The first 7 channels can be used as a 2-pole voltage channel (direct switch on, module can not be plugged-in) or can be connected to a sensor with the relevant module.

7 Module pin assignment



The pin assignment (left) shows the top view of the module backplane.

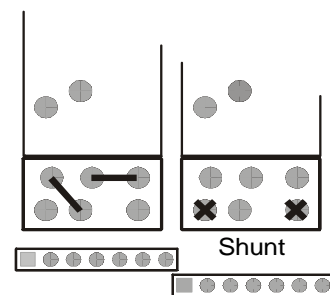
The pin assignment corresponds with those of the 5B modules by Analog Devices®, BURR BROWN® etc. An additional 0EX PIN has been introduced, which is particularly suitable for ungrounded shielding. This is a specific assignment of BMC Messsysteme GmbH, in modules by Analog Devices® and BURR BROWN® this pin is not connected.

8 Connection of the thermocouple

The connection of the thermocouple is effected by means of a relevant short-circuit element, i.e. two plug-in jumpers (left module), being plugged in on the underside of the module, thus allowing for the installation of a cold junction compensation directly at the terminal connection of the thermocouple matching the 5B modules

9 Current measurement modules

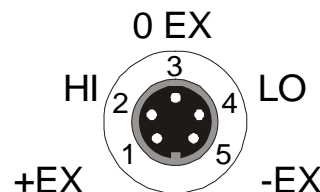
They come with a shunt, which must be plugged in as shown in the figure on the left (module on the right).



10 The analog input connectors

The analog input connectors allow the connection of measuring signals to pins HI and LO.

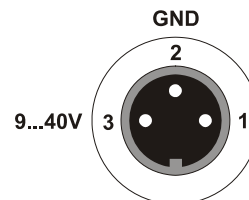
Pins +EX and -EX provide the relevant supply for the sensors, depending on the module.



11 Assignment of power supply connector



Never operate 5V and 9-40V input at the same time!

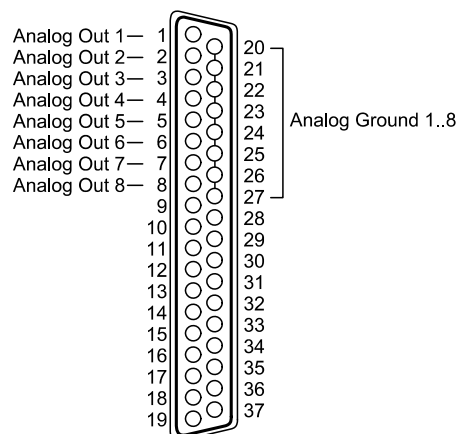


12 Assignment of Line-OUT connector

Connector shell connected to AAB-II chassis (ground).



For a 1:1 connection of the AAB-II to the measuring system the measuring system must be operated in single-ended mode.



13 Important notes for using the AAB-II

- The AAB-II is only suitable for extra-low voltages – please observe the relevant regulations!
- For power supply an electrically isolated power unit (with CE) must be used.
- For cleaning the device, use water and mild detergent only.
- The device is designed to be maintenance-free. For calibration return the device to BMC Messsysteme GmbH.
- When using the direct switches, the relevant LO input is connected with the succeeding measuring system and therefore may be connected to ground. Open inputs should be closed.
- The device must not be used for safety-relevant jobs. By using or processing this product the customer becomes manufacturer by law and therefore is responsible for the proper installation, use and handling of the product. In the case of improper use or unauthorized interference, our warranty ceases and any warranty claim is excluded.



Do not dispose of the product in the domestic waste or at any waste collection places. It has to be either duly disposed according to the WEEE directive or can be returned to bmcm at your own expense.

14 Technical data (typ. at 20°C and 5V supply) registered for utility-model patent

14.1.1 Electrical Data

Power supply:

Electrical isolation:

Max. potentials:

+5V DC ±5%, max. 1.5 A DC or 9V..40V, max. 1A DC
dep. on the module; no isolation in the case of direct switching!
max. ± 60V DC (VDE)

14.1.2 General

Temperature range // relative humidity:

CE standards:

ElektroG // ear registration:

Chassis dimensions // protection type:

Utility-model patent number:

Accessories included:

Accessories optional:

Guarantee:

-25°C..+70°C // 0..90% (non condensing)
EN61000-6-1, EN61000-6-3, EN61010-1; for decl. of conformity (PDF) visit www.bmcm.de
RoHS and WEEE compliant // WEEE Reg.-No. DE75472248
14,5cm x 8,4cm x 17,5cm (L x H x W) // IP20
295 00 488.6
self-adhesive rubber feet, AAB-II stickers, fixing screws for PC-mount
power unit ZU-PW10W, cable set for internal PC-cabling of the AAB-II AAB-KAPC, connecting cables ZUKA37SB, ZUKA37SS, gender changer ZU37SS, 5-pole plug ZU5S712
2 years with effect from sales date, damages at product resulting from improper use excluded

Manufacturer: BMC Messsysteme GmbH. Subject to change due to technical improvements. Errors and printing errors excepted. Rev. 3.2 10/28/2010