

PIB-AI

Analogue input board with isolated inputs.

The analogue input board PIB-AI has 4 inputs. The inputs are electrically isolated from each other and from the rest of the system. The inputs can measure both positive and negative input signals. The resolution of the A/D converter is 20.000 counts (14-15 bits). The most sensitive input range is 100 mV. The other input ranges are 1 V full scale and 10 V full scale. The input impedance is 1 MOhm.

The galvanic isolation allows offset voltages up to 500 VAC/DC between the channels and between an input and ground.

These boards are designed to measure currents and voltages of solar cells (photo voltaic cells). Besides the tuned electrical specifications, the PIB-AI board has two virtual channels (5 and 6) that hold the calculated power (channel 1x2 and channel 3x4 respectively). From channel 1 (V) and 2 (A) as well as from channel 3 (V) and 4 (A) the corresponding power levels are calculated. The power level that is calculated from channel 1 and 2 is available in virtual channel 5. The power level that is calculated from channel 3 and 4 is available in virtual channel 6. Modifications of the board are possible to obtain a calibrated input impedance or non-standard calibration of the channels to customise the board for the sensors that are used for the voltage and current measurements. Refer to the calibration sheets of the boards for the specification of the individual boards.

The technical specifications are:

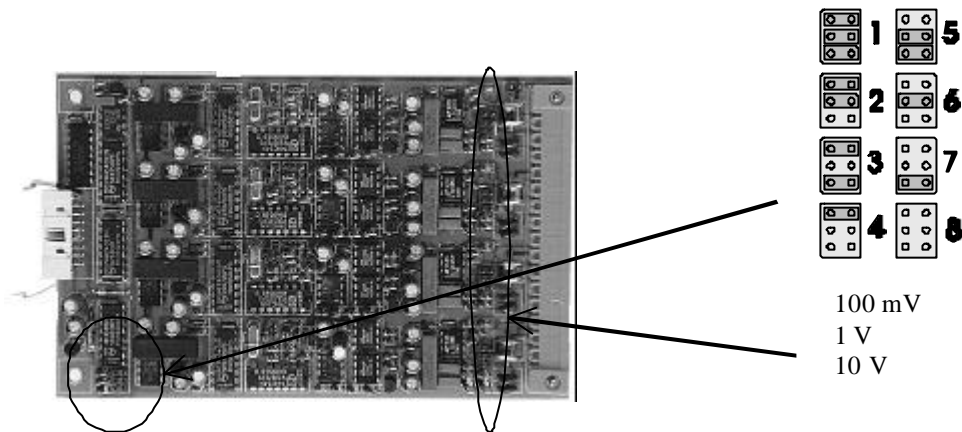
Width in TE's (see PRW)	4
Power requirements:	+15VDC, 80 mA
Measuring channels: #1 through 4	Analogue differential inputs
Input type:	differential, bipolar
Input impedance:	1 MOhm
Jumpers:	station number
	Input sensitivity
Operating temperature:	-10...+50°C
Storage temperature:	-20...+70°C
Accuracy:	0.5%
Common mode rejection:	60 dB (1000x)
Sensitivity settings:	+/- 10 V, +/- .1 V, +/-100 mV
Zero stability:	<10 $\mu\text{V}/^\circ\text{C}$
Resolution:	32.000 counts
A/D type:	dual slope integrating with 50 Hz suppression

The connections are:

Connector pin number	Signal
1	+ input 4
2	0 V input 4

3	- input 4
4	0 V system
5	+ input 3
6	0 V input 3
7	- input 3
8	0 V system
9	+ input 2
10	0 V input 2
11	- input 2
12	0 V system
13	+ input 1
14	0 V input 1
15	- input 1
16	0 V system

The jumper settings are:



Important notice:

You must make sure that the jumper setting for the input range matches the input range specification in the PROWIN signals table. These settings are part of the configuration that is loaded in the system. Normally, the system sets the input range so that the ‘hardware’ input range and the setting in the software are the same. On the isolated inputs, however, the system can not make the ‘hardware’ settings since the input stage is electrically isolated from the system. There is a risk that the configuration setting and the hardware setting are not the same which will result in wrong readings.



Splinterlaan 152
2352 SM Leiderdorp
The Netherlands

Leiderdorp Instruments

Phone: (--31) (0)71 - 541 55 14
Fax: (--31) (0)71 - 541 89 80
E-mail: Info@Leiderdorpinstruments.nl
www.Leiderdorpinstruments.nl

P.O.Box 319
2350 AH Leiderdorp
The Netherlands