

Advantech Data Acquisition card

Advantech Data Acquisition Card communication protocol

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Supported device types and versions

The protocol provides data input/output from PC (PCL series) cards of the Advantech company of the following types: digital input, digital output, analog input, analog output. The installation of the Advantech 32 bit driver (dll) for a particular card type is required. The driver versions 1.3 a 1.4 beta 4 were tested. The data acquisition has been verified for the PCL812PG card.

Communication DLL name: **PROTADVLLIO.DLL**

Communication line configuration

- communication line category: **API**.

Communication station configuration

- communication protocol: **Advantech DA Card**.
- The station address is a number assigned by the "**Advantech IO Device Installation**" installation tool to the card. The tool assigns the numbers starting with 000 and continuing with 001, 002, to the cards.

I/O tag configuration

Possible I/O tag types: **Ai, Ao, Ci, Co, Di, Dout**.

The Ci and Co types allow reading of DI inputs or writing to DO outputs byte-by-byte (8 bits at once).

According to the I/O tag type, the following parameters are required:

Di, Dout types:

- **Port** - serial number of octet (8 bits) of digital inputs or outputs within the card. It is indexed from 0.
- **Bit** - bit number within the port in the range of 0..7.

Ci, Co types:

- **Port** - serial number of the octet of digital inputs or outputs within the card. It is indexed from 0.

Ai type:

- **Channel** - the number of the AI input channel within the card. It is indexed from 0.
- **Gain** - input AI channel gain. It is an index within the range of gains (depending on the card type). It is indexed from 0. The number of gains and input voltage range of individual gains can be acquired by using the "**Driver test**" test software, which is a part of the installation of the Advantech 32-bit driver.

Ao type :

- **Channel** - the number of the AO channel within the card. It is indexed from 0.
- **Reference** - a selection of a voltage reference type for AO output. It depends on the used card and its settings (jumpers). "Int" means internal and "Ext" external reference.
- **Min. Value** - minimal possible configurable voltage for AO output.
- **Max. Value** - max. possible configurable voltage for AO output. The parameters "**Min. Value**" and "**Max. Value**" may be any values within the physically configurable range of the AO output.

Literature

- "Advantech DLL Drivers User's Manual and Programmer's Reference", 1st edition. (c) 1999 Advantech Co., Ltd.

Changes and modifications

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Document revisions

- Ver. 1.0 -February 7th, 2001 - document creation.



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