Advantech ADAM 5000 DeviceNet

Advantech ADAM 5000 DeviceNet communication protocol

Supported device types and versions

The protocol provides data input/output from the ADAM 5000 modules from the Advantech company via the CAN bus using the DeviceNet communication protocol. Communication requires the installation of the Advantech PCL-841 communication interface card. The following object types are supported: digital input, digital output, analog input, analog output. Installation of the Advantech 32-bit driver (dll) is required. The driver versions 1.3 a 1.4 beta 4 were tested. Considering the long-term communication stability, it is recommended to use the version 1.4 beta 4 or later (March 2001), the version 1.3 was not successful on tests (communication had failed within 48 hours, reset of the ADAM 5000 system was required). Using the configuration tool **Advantech IO Device Installation**, it is necessary to define basic ADAM modules connected to the CAN network. The following table shows the list of ADAM modules, which are supported by the communication protocol. The modules ADAM 5051 and ADAM 5017 were tested.

Table 1

ADAM module	Meaning
ADAM 5017	8-channel Analog Input Module
ADAM 5018	7-channel Thermocouple Input Module
ADAM 5024	4-channel Analog Output Module
ADAM 5051	16-point Digital Input Module
ADAM 5056	16-point Digital Output Module
ADAM 5060	6-channel Relay Output Module

Communication DLL name: **PROTADAM5KDN.DLL**

Communication line configuration

- communication line category: **API**.

Communication station configuration

- communication protocol: **Advantech ADAM 5000 DeviceNet**.
- The station address requires:
    - the number assigned to the corresponding CAN channel of the PCL-841 interface ("CAN Device ID").
    - the number assigned to the corresponding ADAM module ("ADAM module ID"). These identification numbers are assigned by the "**Advantech IO Device Installation"** installation tool. Numbers are assigned from 000, 001, 002, etc.

Station protocol parameter

Table 2

Keyword	Full name	Meaning	Units	Default value
DELAY	Delay	Delay among readings of individual stations.	ms	100

A string containing the protocol parameters is being written as follows :

```
Keyword=value;Keyword=value; ...
```

Example :

```
DELAY=300;
```

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).

I/O tag address is a corresponding I/O channel's number within the ADAM module.

Literature

- "Advantech ADAM-5000/CAN DEVICE NET NT DRIVER API", Online help ver. 1.0

Changes and modifications

- March 2002 - added protocol parameter DELAY.

Document revisions

- Ver. 1.0 - February 13th, 2001 - Document creation.
- Ver. 1.1 - March 15th, 2002 - the protocol parameter DELAY added.

ⓘ **Related pages:**

Communication protocols