

Dekati Accessory

PCI BOARD FOR ANALOGUE ELPI DATA OUTPUT

Introduction

ELPIVI software is used to calculate and save particle concentration and size distribution data measured by the ELPI (Electrical Low Pressure Impactor). The ELPIVI software is installed on a laptop or PC connected to the ELPI instrument via RS-232 cable. The ELPIVI software can also be operated remotely, but the results are always saved in an ELPIVI data file either on the PC connected directly in the ELPI instrument or on the PC used to operate the ELPI remotely. The ELPIVI data file is a text file (*.dat file); the exact format of the data file is described in the ELPIVI user manual.

PCI board for analogue ELPI data output

If large amounts of data from different measurement devices are to be processed, use of a designated data logging system can be useful. The PCI board for analogue ELPI data output is an accessory for the ELPI used for transferring data from the PC running the ELPIVI software to data logging/collecting systems. The PCI measurement board is installed into a computer with a PCI slot together with ELPIVIresults software. A slightly modified version of the standard ELPIVI measurement software used to control the ELPI instrument can be operated either in the same computer or remotely, the data transfer is also available through local area network (LAN). See ELPIVI user manual for more details on how to operate the ELPIVI software.

The PCI board has 16 channels, which means that 16 different results from the ELPIVI can be transferred into a data logging system. The transferred results are selected from the ELPIVIresults software. The available results include PM and PN concentrations for 10, 2.5 and 1 μ m, the number, diameter, area, volume and mass concentrations for selected channels (1 to 12), and raw or corrected current values for the selected channels. User can therefore select for example the entire number size distribution (12 channels) PN1.0, PM1.0, PN2.5 and PM2.5 values. The results are transferred as voltage values from -10 to 10 V.

Data transfer from the ELPI instrument to data logging system is presented in the figure in the next page.

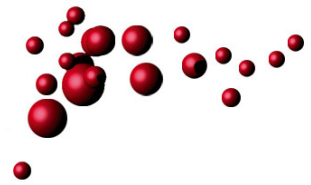
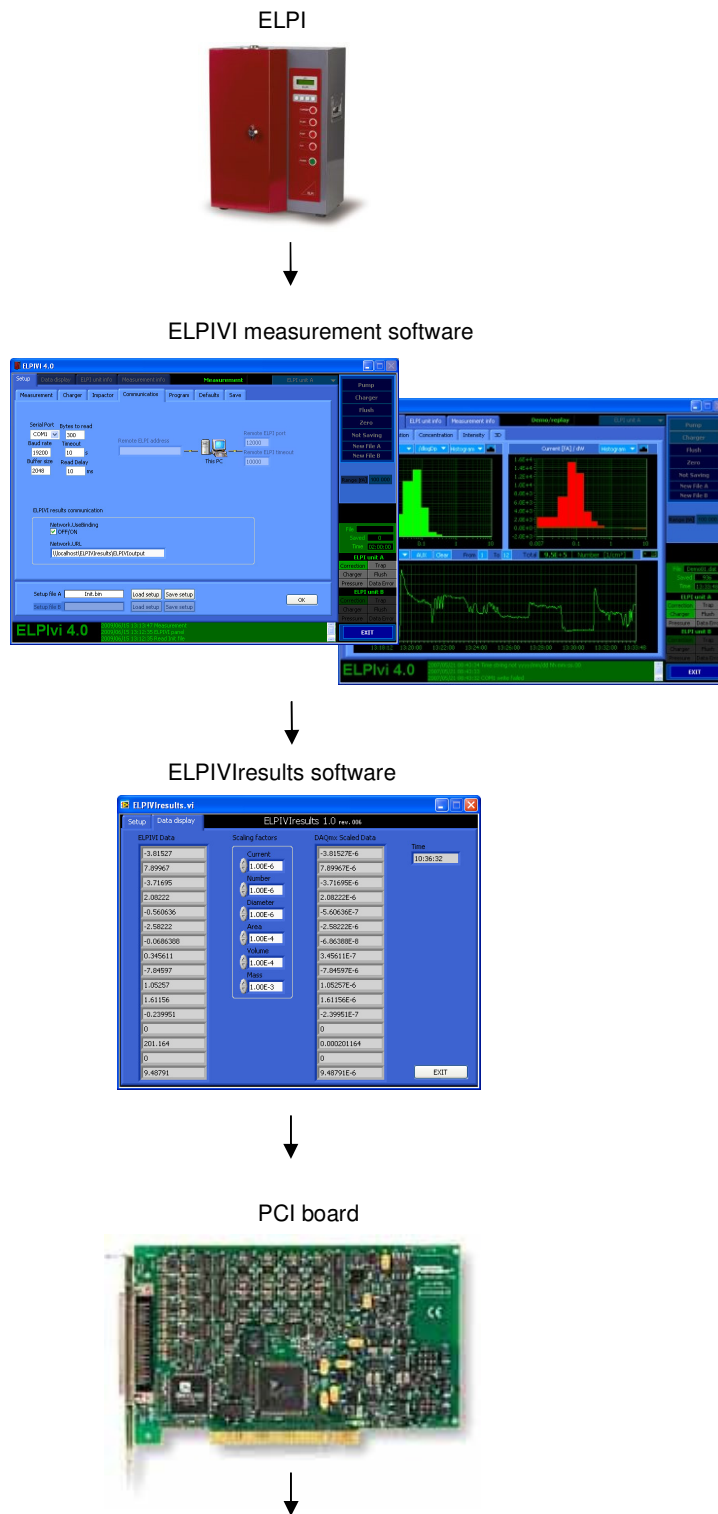
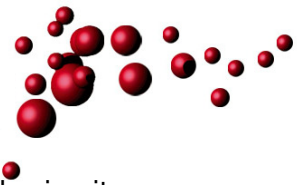


Figure 1. Data transfer from the ELPI instrument to data logging systems



Voltage signals to a data logging system (data logging system not provided by Dekati Ltd.)



The PCI board for analogue ELPI data output package includes the following items:

- PCI board for data transmission (16 channels) incl. cable
- ELPIVResults software (used to communicate with the PCI board)
- ELPIVI measurement software (standard version 4.0 rev 615 is not compatible with the ELPIVI results software). The modified version's operation and usage is exactly the same as with version 4.0 rev 615 – only the communication setup window looks different.
- ELPIVResults software manual

Specifications

Supported Operating Systems	Windows 2000/NT/XP
PCI Output characteristics:	
Resolution	16 bits, 1 in 65,536
Type of DAC	Enhanced R-2R
Data transfers	Programmed I/O
Voltage Output:	
Ranges	± 10.1 V
Output coupling	DC
Power-on state	Independent, user-defined

For more information on the PCI board for analogue ELPI data output and ELPIVResults software, please contact support@dekati.fi.