

Manual dCONFIG

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General

The program dCONFIG offers the users of DACM based instruments a powerful tool for customer specific configurations. This software provides the unlimited access to all component configurations and cycle definitions of the various types of instruments. Therefore, the user should change configurations always carefully because these settings will determine directly the behaviour of the instrument. That means, dCONFIG converts a DACM platform into a specific instrument.

The detailed knowledge regarding the hardware features of the used DACM (Data Acquisition and Control Module) is essential to work with dCONFIG. Because the number and types of components can be different for the various instrument types, the description of the specific implementations are given in an extra hardware reference manual.

That manual shall show the general way for module modifications and guide the user to create own sampling cycles.

System Requirements

- Windows XP / VISTA / 7 (32/64 bit)
- Serial port (RS232) or USB port
- Monitor with at least 1024 x 768 pixels
- Mouse

Communication with the instrument

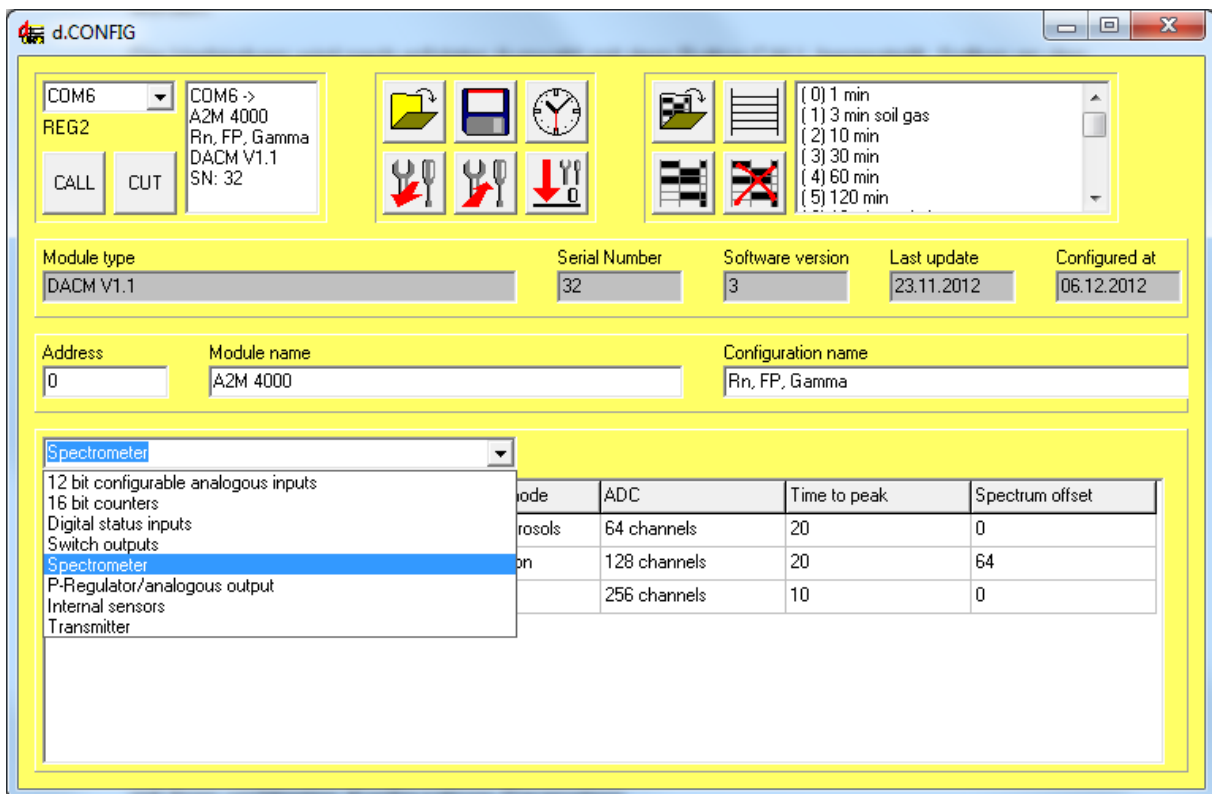
A communication path must be selected before any communication with the instrument can take place. The list-box top of the panel contains all available ports. If a port is already occupied by another program (e.g. dCONFIG, dLIBRARY) it will not appear within the list. The port must be released at first by the other program. If more than one instrument is connected to several ports simultaneously, multiple opening of dVISION is possible.

After the port has been selected, the connection can be established by the button CALL. If a modem or a Net-Monitors ZigBee adapter has been connected to the selected port, a dialog box appears to choose the dial number or the ZigBee end device.


After a connection has been established successfully, the connection chain as well as the instrument identification appears in the memo box below the CALL button.

The connection keeps valid until the CUT button is clicked.

Module and component configuration




After the connection has been established, the recent configuration of the instrument must

be loaded by the  button. By the way, the software gets the information concerning the available components and their configuration. The component names are shown sequentially during the transmission below the communication port list-box. If the transmission has been finished, some information regarding the instrument identity will be filled into the grey fields below the button panels. The user can enter own texts for module name as well as configuration name which will be shown later in menus and data outputs. The field 'Address' has actually no meaning.

The list-box below the editor lines contains now a list of all at the instrument available component types. If a component type will be selected, the table below will show all implemented components of that type (e.g. analogous inputs) together with their most important configuration parameters.



By a double click onto the desired component, a component-specific dialog window will be opened containing all required controls for configuration. The detailed description of the various configuration dialogs is given in the hardware reference manual of the used DACM.

Finally, if all configuration changes have been done, the complete configuration can be

transmitted to the instrument by the  button. Please note that all changes which are directed to the hardware settings become valid not until the next start of sampling cycle.



This button sets all configuration parameters of all components back to an initialisation state. These settings are not equal to the required basic settings for a specific instrument type. Before any configuration changes will be done, the existing configuration should be

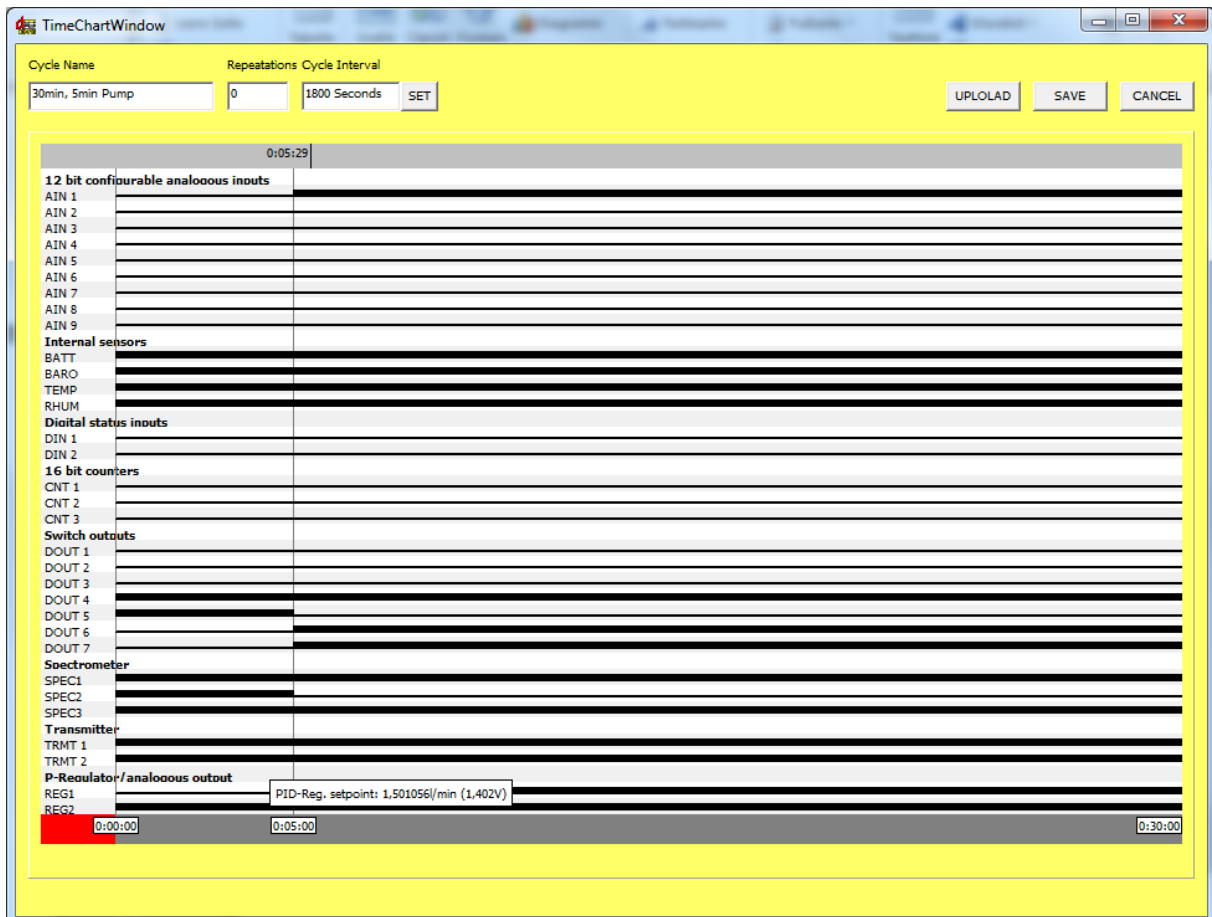
saved at the hard-disk by the  button. In case of wrong settings, this file can be opened later by the  button and transferred back to the instrument. The extension for configuration files is '*.dam'. A configuration file can be applied only to instruments of the same type (same component set).



This button sets the real time clock of the instrument to the actual PC time.

Cycle definition

A sampling cycle is defined as the sum of all actions which are necessary to get a desired measurement result. The result will be saved at the end of the cycle. The periodical repetition of the cycle results in a time series of the measured value. It is possible to split the cycle into up to 32 sequential subintervals (also called steps), whereas the sum of all steps gives the interval period of the cycle. The status of each component can be defined for each step. This, for example, allows the user to define exactly the sampling point of a sensor or to control sampling equipment within the cycle.



It is strictly required to load the configuration from the instrument or open a configuration file before opening a cycle file or creating a new cycle. The cycle file which will be loaded must be originally generated for the same instrument type like the actually loaded configuration file. After clicking the button, the cycle definition chart will be opened.

Administration of cycle definitions



This button opens a cycle definition file. The saved file is instrument type specific and can be applied only for instruments of the same type.



This button creates a clear cycle for the instrument type represented by the actually loaded configuration file. The status of all components is set to inactive. The cycle interval is pre-set to 1 hour (3600 seconds). There are no step definitions.



Use this button to read a list with the names of all cycles already stored in the instrument. Up to 16 cycles can be stored simultaneously, indexed from 0 to 15. The list appears in the list box right beside the cycle administration buttons. To read and edit the cycle, click onto one of the listed cycle names.



All cycles which have been stored at the instrument will be cleared. At least one new cycle must be transferred to the instrument. The index of the uploaded cycle can be anywhere in the valid range of 0 to 15.

After loading, opening, or creating a new cycle, a window to edit the component states will be opened automatically. Some editor fields to define the frame of the cycle are placed in the header of the window:


Cycle Name Enter a name to select the cycle later from the list of available cycles.

Repetitions Enter the number of repetitions for the cycle. If you set the value to zero, the cycle is repeated until the measurement is stopped by the user. Otherwise the cycle stops automatically after the pre-set number of repetitions.

Cycle interval That value defines the total interval period of the cycle. At the end of the cycle, all acquired data is saved and the next cycle period starts. To change the period click to the "SET" button and enter the desired interval (in seconds) into the dialog window. The cycle period can be changed any time, even if steps have been already defined. Note that in case of shortening the period, the steps which are becoming placed outside the interval will be removed.

Time charts of the components

The table contains one separate time bar for each available component. The name of the component is stated at the left border. A click onto the component name opens the component configuration dialog which is showing all parameter settings. It is possible to

make now changes but the configuration must be transferred by the  button to the instrument after leaving the cycle definition window.

The X-axis of the time chart is related to the duration of a cycle. It is possible to zoom in the axis to get a better access to single steps. This is helpful in case of a long cycle intervals and short steps. To zoom into the axis, two sequential mouse-clicks onto the grey bar below the component bars are necessary. The related time stamps are displayed on the cursor. Click into the red area beside the grey bar to get back the whole cycle interval.

Time step definition

Up to 31 time stamps resulting in 32 steps can be placed within a cycle interval. To set a time stamp, move the mouse cursor over the grey bar at the top of the table. A cursor line in combination with the time information becomes visible. A mouse click onto the bar places a new time stamp into the chart. A dialog appears to adjust the time stamp if it was not exactly placed. The ADD button finishes the procedure.

To remove a separator line, click right beside the time stamp into the grey area at the top while the <SHIFT> button of the keyboard is pressed. Click "DELETE" or select another time stamp to clear from the list box within the appearing dialog.

Component status definition

A step period is defined by two sequential time stamps (or one and the start/end of the cycle). The status of each component can be modified for each step period. There are two different types of components. In the simplest case, the component only can be either activated or deactivated. This behaviour is called "bit controlled". Some component types need a value to set the status (e.g. the set-point of a regulator). These components are called "value controlled". The meaning of the value or active/inactive status depends on the component type or on the configured operation mode of the component. Examples for bit-controlled components are switch outputs (active/inactive turns the switch ON/OFF) or analogous inputs (physical sampling ON/OFF). Value controlled components are, for example, regulators or analogous outputs where the value defines the set-point of the regulator or the applied output voltage.

To change the status of a component, click into the table onto the area defined by the component row and step column. For bit controlled components, each click toggles between active (black) and inactive (white) status. In case of a value controlled component, an input line appears to enter the desired value, for example the flow rate for a flow regulator.

SAVE/UPLOAD cycle information

Each new defined or modified cycle should be saved (<SAVE> button) on hard disk before uploading. Otherwise the cycle is lost if the transfer fails (e.g. bad connection, wrong COM port selection). Open the saved file again and click to the upload button. A box to enter the storage index will appear on the screen. Any storage position between 0 and 15 can be chosen. Please note, that already stored cycles at the same position will be overwritten by the new one without notice.

The storage index defines the order of cycles within the selection lists (instrument or PC). It is not necessary to keep the order of cycles. For example, two cycles can be stored at positions 5 and 8 even if the intermediate indexes are not used. To show the success of the

storage operation, the cycle list box can be updated by the  button