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# DEWEDaq

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## Software version

DEWEDaq Software user manual corresponds with

- DEWEConfig - version 3.5
- PADLog - version 1.30
- DEWEDaq driver for DASyLab - version 2.0
- DEWETerminal - version 2.1

## Printing notice

Printing version 1.0.8

Release date July 14, 1999

Specifications subject to change without notice.

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DEWETRON warrants that

(a) the Software will perform substantially in accordance with the accompanying written materials for a period of ninety (90) days from the date of receipt.

(b) the medium on which the software is recorded will be free from defects in material and workmanship under normal use and service for a period of ninety (90) days from the date of receipt.

## Customer remedies

DEWETRON's entire liability and your exclusive remedy shall be, at DEWETRON's option, either

# General information

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## **Software package contents**

The DEWEDaq software package is shipped on CD-ROM and contains (in alphabetical order):

- BK500 Plus network analyser (to be licensed, separate manual)
- DEWEConfig configuration software (chapter 2)
- DEWEDaq driver for DASyLab (chapter 4)
- DEWEScope+ data acquisition software (to be licensed, separate manual)
- DEWETerminal service tool (chapter 5)
- PADLog recorder software (chapter 3)

## **Installation**

If you purchased a DEWE-3000, DEWE-2000, or any PC from Dewetron, then it already has the software installed and ready to use.

If you have a Dewetron PC and need to reinstall the software for any reason, you will find a directory on the C drive called DEWETRON\INSTALL. This directory normally contains backup disk images from the major software packages that were installed on your system, including Windows, DASyLab (if purchased), and PADLog/DEWEConfig. Others may be included according to your system.

If this directory is not available anymore, or if you are loading this software onto your own computer, please locate the DEWEDaq CD-ROM that were provided with your Dewetron hardware. Run INSTALL.EXE and follow the instructions from there.

## 1. First steps

### 1.1 Installing DEWEConfig

DEWEConfig is an application which allows you to configure all of the DAQ and PAD series plug-in modules that are installed within your system. You can configure all programmable (DAQP and PAD series) modules, including setting their range(s) and filter(s). You can also set/change the serial port address of these programmable modules. DEWEConfig stores all of this information in a special Windows "ini file", which is also used by our own DLL under DASyLab.

DEWEConfig is already installed on any DEWE-2000, DEWE-3000 or other PC-based data acquisition system shipped with DEWE modules. The installation of DEWEConfig is only necessary when you use your own PC. In this case follow the instructions of the INSTALL.EXE setup program. The complete configuration procedure is described on the next pages.

*Note: The installation is completely supported by the install shield. When it is necessary to reinstall DEWEConfig, you should first uninstall the program (stored setups are not removed) before reinstalling.*

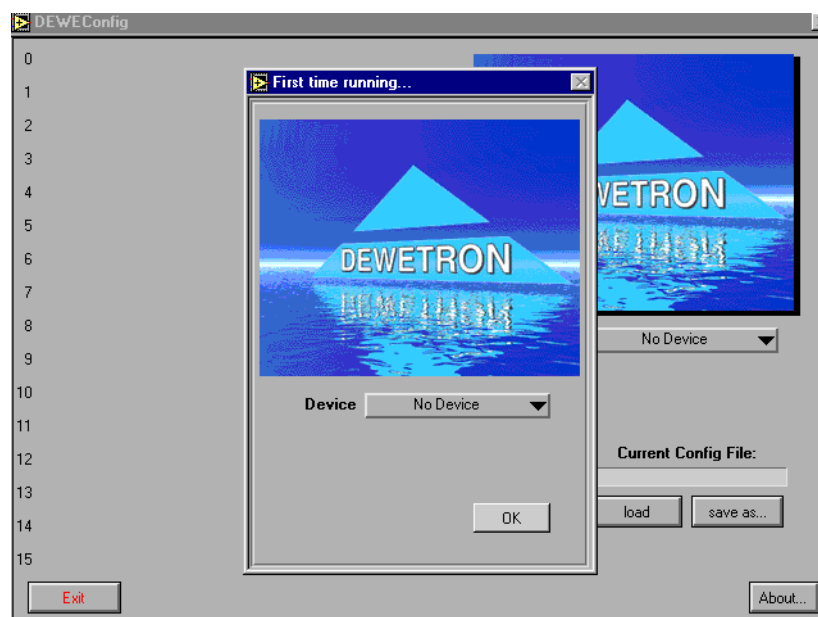
### 1.2 Starting DEWEConfig

To start DEWEConfig, use the DEWEConfig program icon on the Windows desktop or the link in the Windows program manager.



### 1.3 First startup

Starting the DEWEConfig software takes several seconds. Only after the first startup, the following screen appears. Otherwise a message appears as described in 1.6 on next page.

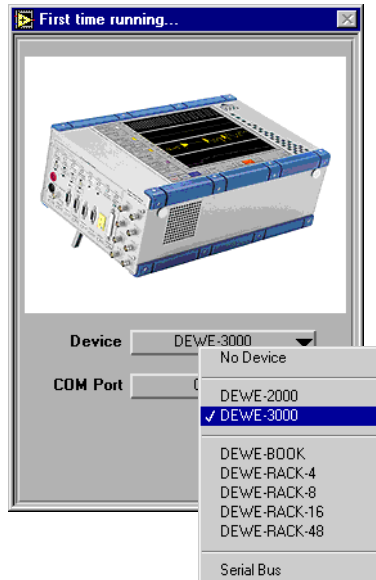


# DEWEConfig

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## 1.4 Select device

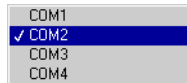
Please choose which "Device" you are using from the pull-down menu. In this case we will select DEWE-3000, but your machine may be a different model. Select your system here.



The selected system is displayed as picture to identify the correct system.

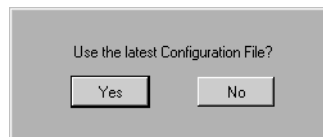
## 1.5 Select COM port

In some cases, the COM port selection is hardwired in the machine and cannot be changed (DEWE-2000 and DEWE-3000 systems). However, if you are running this software on your own PC, you can select which port is used to communicate with the DEWE-RACK or DEWE-BOOK. Please make the selection at this time.



## 1.6 Use defaults

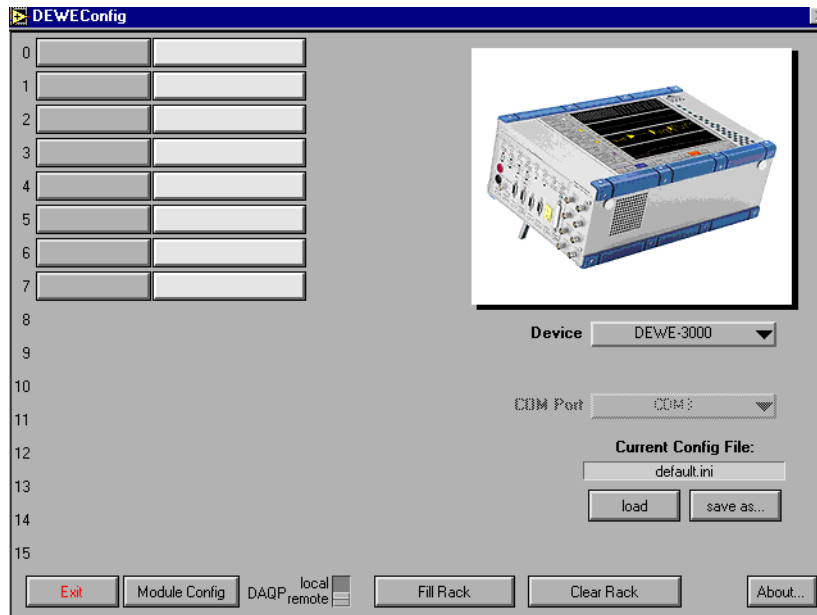
The system configuration is stored in default or custom files. After starting the software, you are asked to use either the latest configuration file or a stored one.



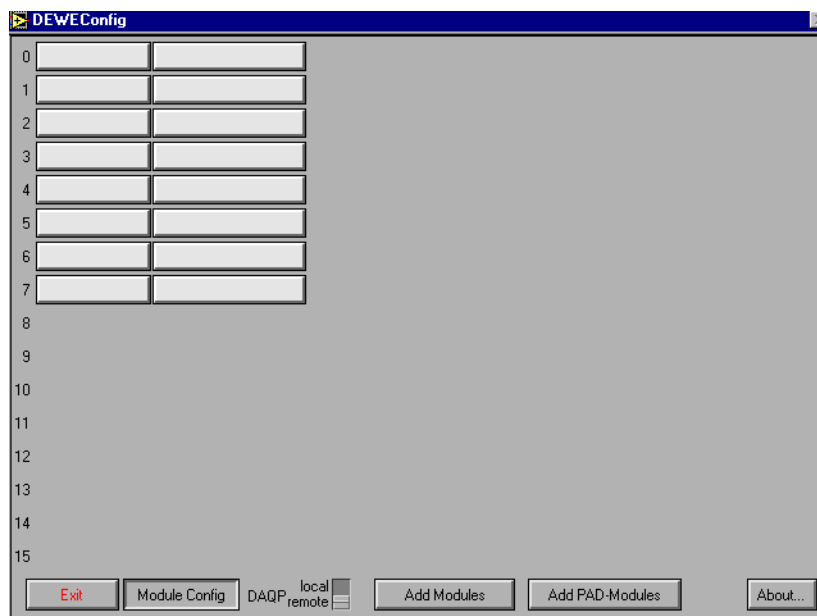
**No** offers the possibility to select a stored configuration file. If you do not respond within approximately five seconds or press the **Yes** button, the latest configuration file is used.

## 2. Module configuration

At this time, no configuration is defined.



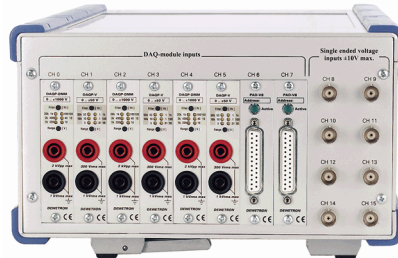
Now you have to determine the modules installed, and in which slots they are installed. One way to do that is to click on the **Module Config** button near the bottom of the DEWEConfig screen. At first, this screen shows no installed modules. Again, if your DEWEConfig is already set up, there is no reason to change anything, just follow along or skip to the next section.



# DEWEConfig

## 2.1 DAQ module configuration

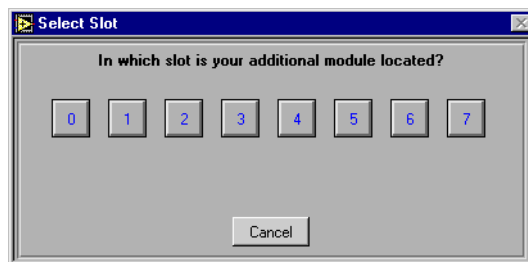
Normally it is best to start from the top and work down. In our example DEWE-3000 system, here is what we will install:



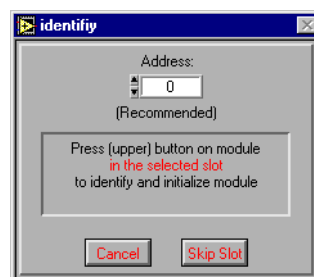
Slot 0	DAQP-DMM	programmable	analog output	1 channel
Slot 1	DAQP-V	programmable	analog output	1 channel
Slot 2	DAQP-DMM	programmable	analog output	1 channel
Slot 3	DAQP-V	programmable	analog output	1 channel
Slot 4	DAQP-DMM	programmable	analog output	1 channel
Slot 5	DAQP-V	programmable	analog output	1 channel
Slot 6	PAD-V8	programmable	digital output	8 channels
Slot 7	PAD-V8	programmable	digital output	8 channels

This is a mixture of DAQP (programmable, single-channel modules) and PAD (programmable, multi-channel modules). We will install them by using the convenient tools provided. Installing DAQ or DAQN (non-programmable, single-channel modules) is done in the same way than DAQP modules.

To install a DAQ series module in Slot 0, click the button labeled **Add Modules** (not the one labeled **Add PAD-Modules**). This dialog will appear:



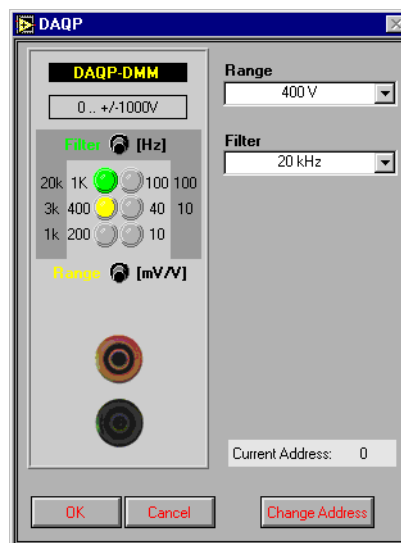
Now click on "0." Following dialog box will appear:



Just follow the instructions on the screen and press the TOP button on the actual DAQP-DMM module in slot 0. Be careful not to choose the wrong module!

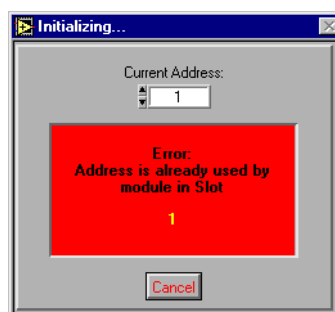
The software will know exactly where this module is located in the rack. Keep in mind that DEWE-RACK systems can be made of up to 256 DEWE-MODULES! It is easy to imagine how difficult it would be to keep them all straight. This software automates the setup process, and creates a text file with the complete setup configuration on your computer.

After you press the little black button on the top of this module, the module setup screen will appear:



The range and filter settings from the module are shown. You can change them if you like, or you can do it later from within other programs, e.g. DASyLab. The current address of the module is also shown. There is no reason to change it right now, but if you wanted to in the future, you can press the **Change Address** button here and follow the on-screen instructions.

*CAUTION: It is not allowed to use the same address for two or more DAQ modules! Trying to set address to already used address causes following message:*

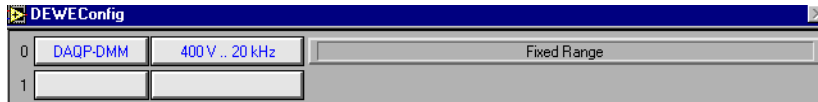


*Note: The address number is not necessarily the same as the slot number (but makes life easier)!*

# DEWEConfig

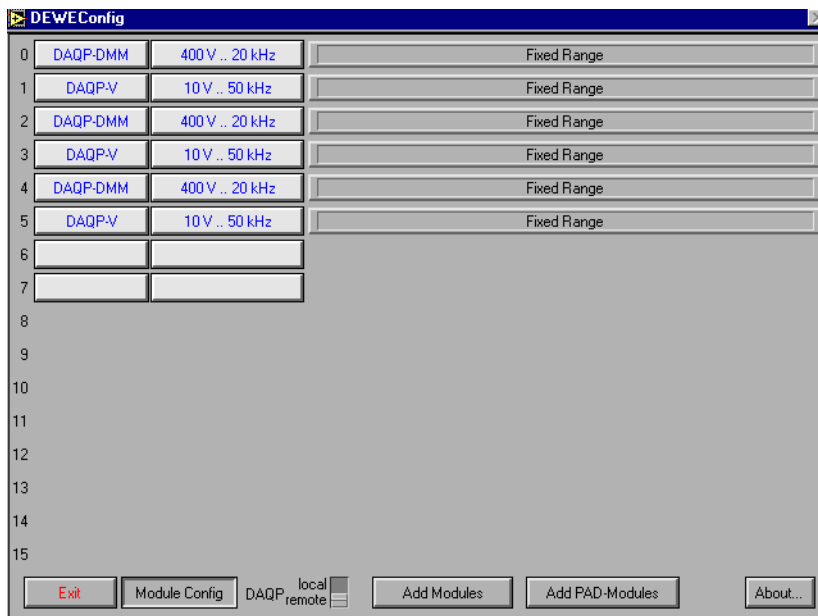
---

When you are done, click OK to return to the module configuration screen. Now it shows our module installed in slot 0:



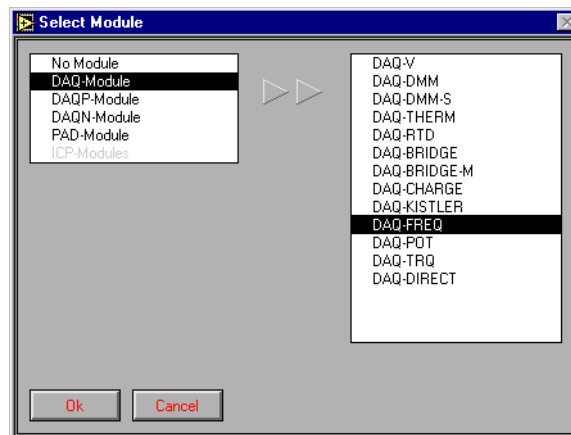
It shows that our DAQP-DMM in Slot 0 is presently set to the 400V range, with the filter set at the highest setting (20 kHz). The grey bar indicates that this is a "fixed range." This means that the range does not have a vernier. (To make small adjustments to the gain, we do this by software. This will be covered later).

Now move on the next modules. They are all DAQP series, so the procedure is the same. At the end, the screen looks like this:



Slots 0 through 5 are done! However, when we use a DAQ/DAQN series module, it becomes a bit different. This is because DAQ and DAQN modules are not programmable. This means that the software cannot communicate with them as in the example above.

Since we want to install for example a DAQ-FREQ in slot 6, do not press **Add Modules**. Instead, just click on the blank button on Slot 6 itself. When you do, the select module dialog box will appear:

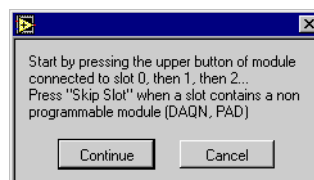


From the box on the left, click once on "DAQ module." From the box on the right, click once on the correct module, which in our example is a DAQ-FREQ. Now click OK, and you're done!

The following table shows all modules available in the select module dialog box.

DAQ	DAQN	DAQP	PAD
DAQ-V	DAQN-V	DAQP-V	PAD-V8
DAQ-DMM	DAQN-DMM	DAQP- $\mu$ V	PAD-VTH8
DAQ-DMM-S	DAQN-BRIDGE	DAQP-DMM	PAD-TH8
DAQ-THERM	DAQN-CHARGE	DAQP-BRIDGE	PAD-RTD3
DAQ-RTD		DAQP-TRQ	PAD-AO1
DAQ-BRIDGE		DAQP-CHARGE	PAD-CNT2
DAQ-BRIDGE-M			PAD-DI8
DAQ-CHARGE			PAD-DO7
DAQ-KISTLER			
DAQ-FREQ			
DAQ-POT			
DAQ-TRQ			
DAQ-DIRECT			

An easy way to install DAQP modules more or less automatically is using the **Fill Rack** button in the main menu. Be aware that this function is only applicable to DAQP modules!



Follow the instructions. When DAQ / DAQN or DAQP module is between DAQP modules, just press Skip Slot. Cancel stops the procedure. The fill rack function doesn't read out the current module settings, so the range and filter selection has to be done like described earlier.

Matching to the fill rack function is **Clear Rack**. This function deletes all settings in the DEWEConfig for new selection. Normally there is no need for using it!

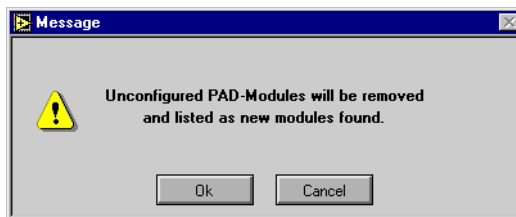
# DEWEConfig

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## 2.2 PAD module configuration

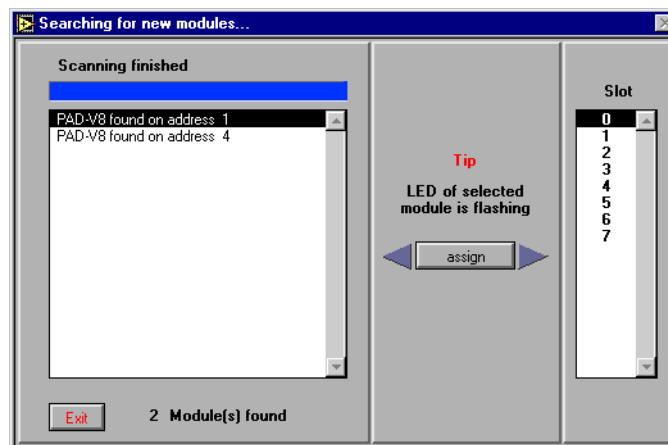
Corresponding to our example in 2.1, we will install two PAD-V8 in slot 6 and 7. You just found out that you can click on the blank button to the right of the slot number and choose the module from a list. In this case, since we have only two PAD modules to install, this might be the fastest way. But what if you don't know the address of the PAD module? Normally it is written on the module itself, but it may have been changed. Also, what if you have to install 32 PAD modules - do you want to do it one module at a time, or do them all at once in a fraction of the time? Using the automated method will allow you to install all of your PAD modules with a single procedure, and it will find all of them for you.

Now we get to click on the **Add Pad-Modules** button from the module config screen. When you do, this warning will appear:



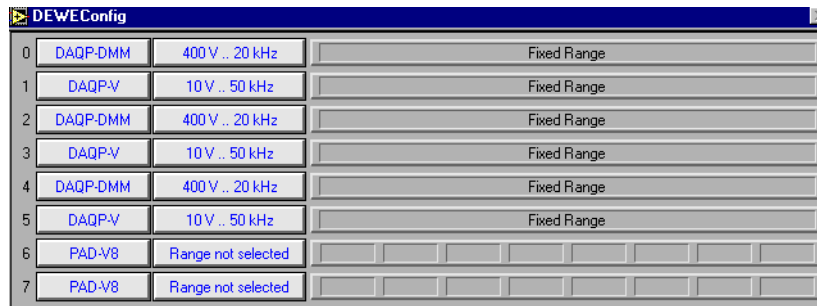
*Note: PAD-VTH8 modules MUST have their connectors plugged in and their green lights on in order for the software to communicate with them! This is not required with other PAD modules.*

The software is just telling you that it is going to "wipe the slate clean" in terms of PAD modules and find all of them that it can. If you want to proceed, click OK. The software will scan all 256 possible addresses for PAD modules, and build a list on the screen for you:

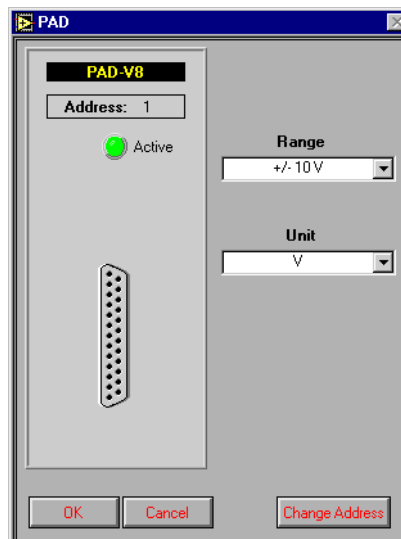


It found our two PAD-V8 at address 1 and 4. Now we need to tell the software which slot they are in. Remember: slot numbers and addresses are not necessarily the same thing as this example shows! Since these modules are physically located in Slot 6 and 7, please click once on the correct slot number for the first module on the box on the right. Now click on the **Assign** button in the middle to LINK this module at this address to this slot. Select the next one in the list at left and then follow the same procedure. If you have multiple PAD modules you will be able to tell which one is which by the flashing LED. As it says above the Assign button on the screen, the "LED of selected module is flashing."

When all of your PAD modules are assigned, press Exit to return to the module configuration screen.



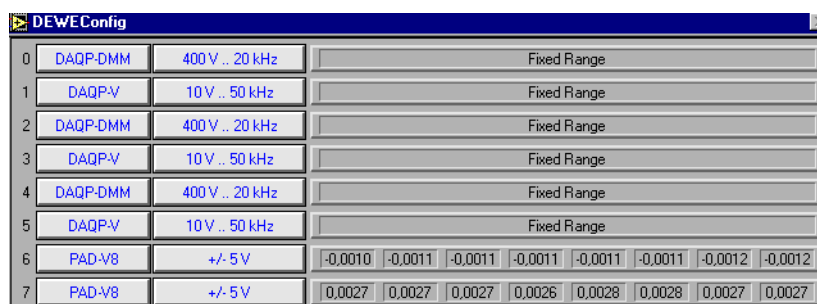
Both PAD-V8 say "Range not selected." There is just one more step: we need to configure the range/mode of the PAD-V8 that we just installed. Click on the button that says "Range not selected:"



Select a range and unit (depending on module), and then click OK. You will also notice that the module address is still 1. If it is necessary, change address to the slot number to make life easier.

*Note: PAD modules have built-in linearization and cold-junction compensation!*

When you press OK to complete this module's setup, you may notice that there are readings already on the module configuration screen!

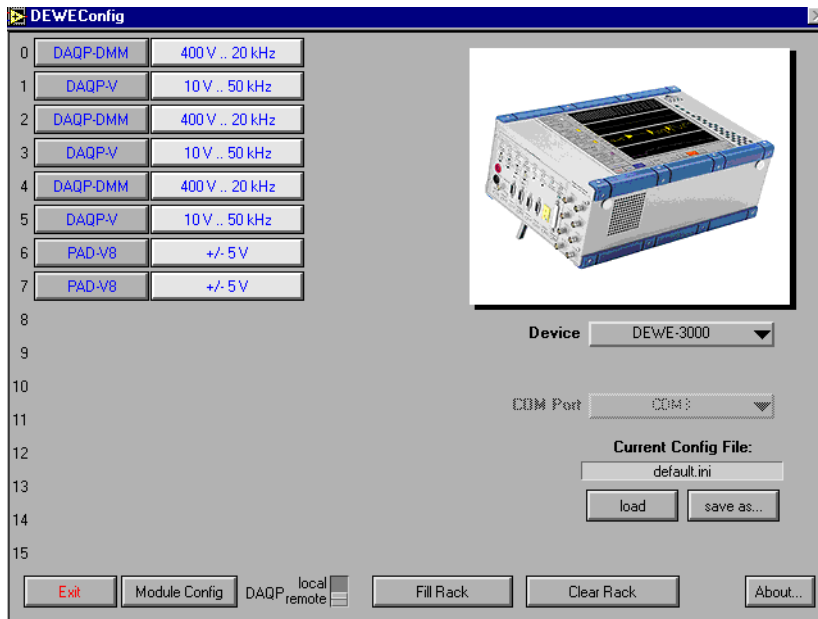


# DEWEConfig

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*Note: if the readings look wrong, this is probably because you do not have any thermocouples attached. In this case, erroneous readings from the cold-junction compensation circuit are being shown.*

That's it! Everything is done. Press **Module Config** to return to the main screen. Here is what it looks like:



The software will automatically save all of this information - you do not need to tell it to do so, or change the "Current Config file" as shown on the screen. However, you will see that there are controls for saving the current config under a different name, or loading a preexisting file. This has been provided for those users who may use several different hardware setups, either by changing the modules plugged into their system, or by attaching different DEWE-RACK's or DEWE-BOOK's to a single PC. This gives you a quick way to restore a complete set of conditions which match your hardware.

# DEWEConfig

---

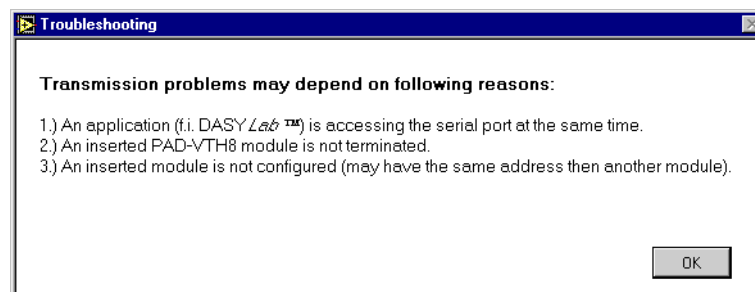
## 3. About DEWEConfig

This button shows the current version and release date of the installed DEWEConfig software. This information is required for all support requests.



## 3.1 Trouble shooting

This feature contains trouble shooting for communication problems with DEWE modules. For other questions please use our support formular on our web-site (<http://www.dewetron.com>) or send an email to [support@dewetron.com](mailto:support@dewetron.com)



## 3.2 Hotkeys

Helpful hotkeys for fast access to most frequently used functions.



## 4. Notes

## 1. First steps

PADLog was written by Dewetron to make acquisition of a handful to hundreds or thousands of channels from our PAD modules as easy as possible. It does not read data from DAQ (including DAQN and DAQP) modules – we have a separate program for that called DEWEScope+, which is covered in a separate manual.

It can acquire on-line and/or average values from up to 256 PAD modules (2048 channels max). It does not provide any analytical functions, but rather it writes the data to your local or network disk for off-line analysis.

### 1.1 Installing PADLog

The program is already installed on any DEWE-2000, DEWE-3000 or other PC-based data acquisition system with PAD modules.

The installation of PADLog is only necessary when you use your own PC. You can install it together with DEWEConfig software. In this case follow the instructions of the INSTALL.EXE setup program. The complete configuration procedure is described on the next pages.

*Note: The installation is completely supported by the install shield. When it is necessary to reinstall PADLog, you should first uninstall the program (stored setups are not removed) before reinstalling.*

### 1.2 Starting PADLog

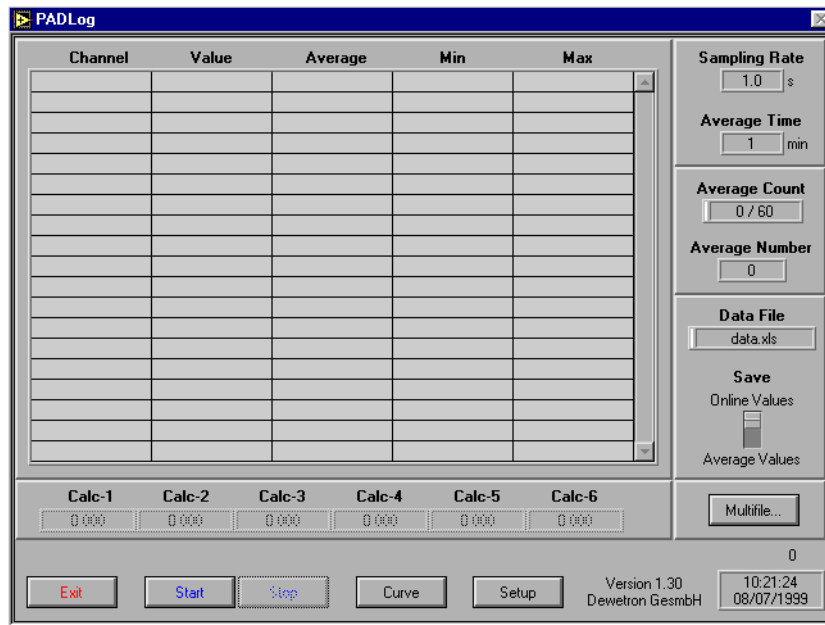
To start PADLog, use the PADLog program icon on the Windows desktop (only available when PAD modules are used in your system).



### 1.3 First startup

When you first start PADLog, it will take up to a minute to load, depending on the speed of your system and available resources. If you have not run DEWEConfig before, then there may not be any channel numbers shown at all in the left-most column. We will add them in a moment. First, a brief look at this main logging screen:

# PADLog

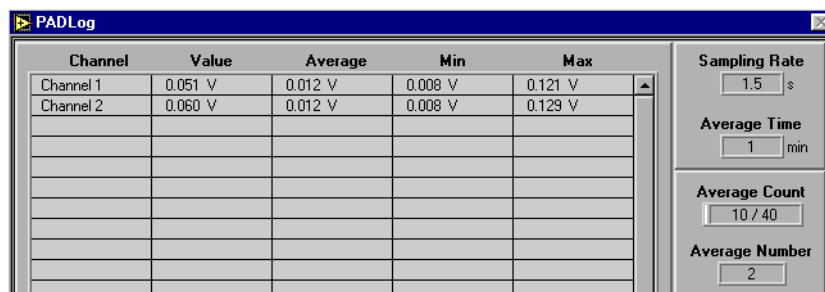


## 2. The main screen

The main part of the screen that looks like a spreadsheet is where your data will be displayed. From left to right, the columns will show you the channel name, value (reading), the average value, and the minimum and maximum values that have occurred during the averaging intervals. What this means in plain english is that the "value" is the reading taken at the sampling rate, whereas the average, min, and max are values derived by the system at regular intervals which you can choose. Look at the top right of the screen and you can see that the system will take a real value for each channel every 1 second, and every minute the system will calculate and display a set of average, min and max values for each channel.

### 2.1 Sample rate / average values

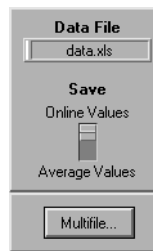
Just below that is the "Average Count" field. This is a real-time indicator of how many samples remain until the next averaging occurs. This is easier to show than to explain, so here is what it looks like when running:



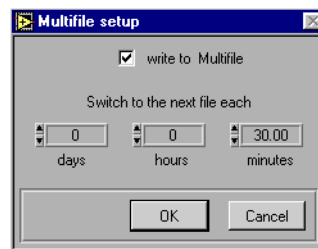
### 2.2 Data storage / multfile

Below that you can choose whether to save the on-line values, or just the average/min/max values. This does not change what appears on the screen; only what is written to the file!

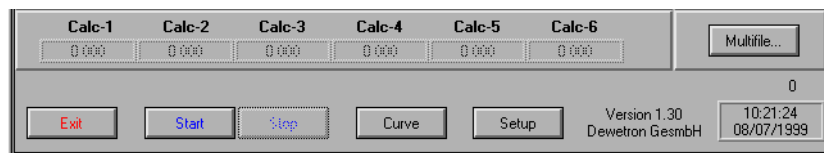
Selecting **Average Values** makes the file sizes much smaller, of course, but also records less data.



Save data as multifile offers the possibility to split the data into multiple files. You just define a time window, and after this time PADLog creates new files. This offers the possibility to store a new file for example each hour or each day.



The bottom of the screen shows the Calc-1 through Calc-6 fields. These are user-programmable calculated channels. You can perform basic mathematical operations with your channels, also using a constant value, to create these calculated channels. For example, if you have a voltage channel and an ampere channel, you can multiply them together and create a power channel.



## 2.3 Main screen buttons

Below that are the main buttons used to control the program, including:

**Exit** - quits the program

**Start / Stop** - starts/stop the acquisition

**Curve (Table)** - switches between showing the table (default spreadsheet-like presentation), or any 6 inputs in a Y-t strip chart display. This button toggles labels depending on which screen is currently active.

**Setup** - The setup screen is where you configure the inputs and their scaling, create your calculated channels, set the sample rate and average time, filename and location, and access the DEWEConfig program if you need to set up your PAD modules.

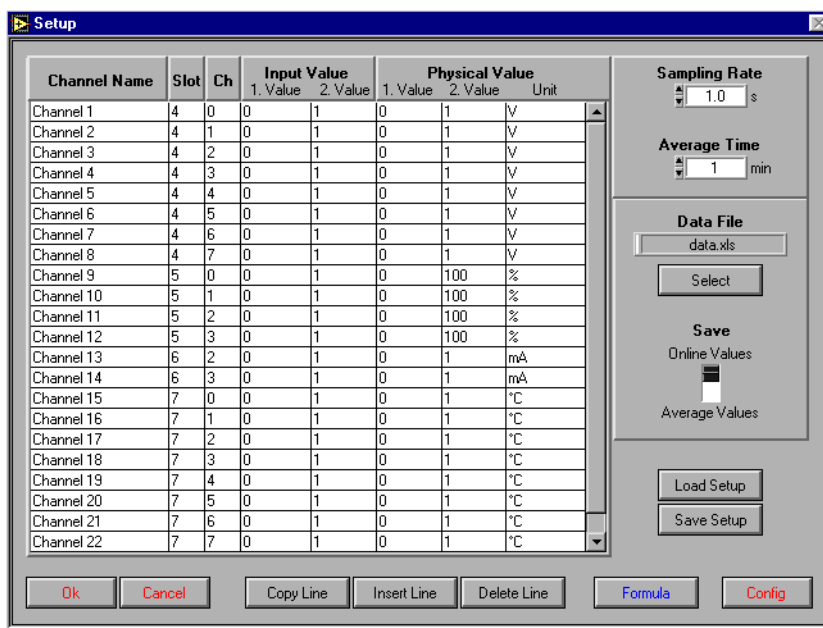
Since we have not configured our PADLog setup yet, please click the **Setup** button to access that screen.

# PADLog

Note: While PADLog is taking data, only the STOP button is active; the others are grayed out. Press STOP if you need to change your setup.

## 3. PADLog setup screen

As we just learned, the setup screen is where you configure the inputs and their scaling, create your calculated channels, set the sample rate and average time, filename and location, and access the DEWEConfig program if you need to set up your PAD modules. Here it is:



### 3.1 Naming your inputs, setting the slot and channel

In the table/spreadsheet area, you can freely type in the names of your inputs, and then tell the system where to find them. In our sample system shown above, we have a DEWE-3000 with three PAD-V8 in slot 4 to 6 and one PAD-VTH8 in slot 7 of a DEWE-3000 system. Each module has 8 channels (0 to 7). In the slot column we type 4 to 7, depending on the module, then in the CH column we type the absolute input number of each of the channels.

As you can see in the example, you don't have to read out all channels; we just read out channel 0 to 3 from the module in slot 5, and channel 2 to 3 from module in slot 6.

Instead of "Channel n" you can give more useful names, like "Chamber temp 1," and so on.

### 3.2 Scaling your inputs

The Input Value and Physical Value columns are a simple way for you to perform 2-point scaling on your inputs. For example, the PAD-V8 in slot 5 has a 0 to 1 V input. This input really represents 0 to 100 % humidity. You would configure this input like this:

Channel Name	Slot	Ch	Input Value		Physical Value		
			1. Value	2. Value	1. Value	2. Value	Unit
Channel 9	5	0	0	1	0	100	%

The actual 0 to 1 V value of the signal has been scaled to 0 to 100, and we set the units to %. It is really just that simple to put your values into whatever unit of measurement you want. If your channels are really temperature, then there is rarely any need for this; just enter the correct temperature scale here (C or F) depending on how the PAD-VTH8 or PAD-TH8 has been set.

Channel Name	Slot	Ch	Input Value		Physical Value		
			1. Value	2. Value	1. Value	2. Value	Unit
Channel 15	7	0	0	1	0	1	°C

*Note: PAD modules are configured for thermocouple type and scale (C or F) within the DEWEConfig program! You can access this program by clicking the **Config** button at the bottom of the PADLog setup screen, or by running DEWEConfig as a separate executable.*

To leave the input with no scaling, enter the same two values under Physical Value as are under Input Value. Typically, these are 0 and 1, but they can be any two numbers as long as they are the same under both columns. Example: you could put 1 and 343 under Input Value, and use the same two numbers under Physical Value. As long as the two number sets are identical, no scaling will occur. It is less of a burden on the system if these numbers are as small as possible. 0 and 1 work best.

### 3.3 Adding lots of channels

With PADLog systems of hundreds of channels or more, it is easy to imagine how tedious it could be to enter one line at a time on this setup screen. This is why we have provided these buttons along the bottom for easily copying and pasting channels as many times as you like:

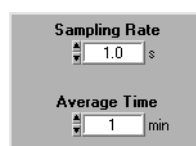


Click the mouse to put the cursor into the line that you want to copy. Now click the **Copy Line** button. Now click within the line at which you would like to paste a copy of this channel and click the **Insert Line** button. You can click repeatedly to add a large number of channels! If you add more than you need, click to put the cursor somewhere within the line that you want to remove and then click the **Delete Line** button.

*Note: Do not forget to change the numbers (slot and channel) and scaling at added channels!*

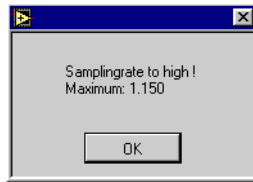
### 3.4 Setting the sample rate and average time

You can directly type a number into this field, or use the up/down spinner buttons to select a sample rate. Valid values are from 0.5 to 60 seconds, in 0.5 s increments. The default value is 1 s. All channels will be sampled once per second. Although 0.5 s is possible, it may time out in certain systems. Using a sample rate of 2 s or greater (5 s or less is ideal for large channel counts) provides reliable results.



# PADLog

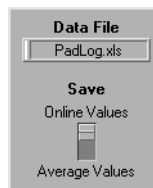
When it is not possible for the system to read out all channels within the sample time, a warning message appears, which shows the minimum sampling time.



You may also select the average time. Valid times are 1, 5, 10, 15, 30, and 60 minutes. The default value is 1 minute. Each minute the system will derive a set of average, min, and max values for all channels and display them on the screen.

### 3.5 Selecting the filename

The current filename under which data will be written is shown below the Data File caption. First time start define of select a filename. To change it, click on the **Select** button and use the normal Windows file-naming dialog boxes to either select an existing file to be overwritten, or enter a new filename. PADLog files will be stored with an XLS extension for easy opening under Microsoft Excel. However, they are really delimited ASCII files, and can be opened by virtually any data analysis program and any word processor.



Part of the sample file:

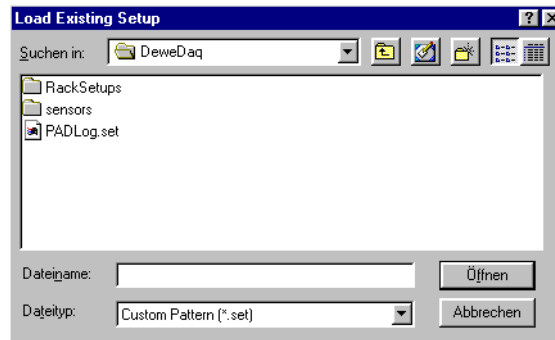
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	TimeChannel	Date	Time	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	Channel 7	Channel 8	Channel 9	Channel 10	Channel 11	Channel 12	Channel 13	Channel 14
2				V	V	V	V	V	V	V	V	%	%	%	%	mA	mA
3	3014267529	08.07.99	10:32:09	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,37	0,38	0,38	0,39	-0,003	-0,002
4	3014267532	08.07.99	10:32:12	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,4	0,4	0,4	0,4	-0,004	-0,003
5	3014267535	08.07.99	10:32:15	0,008	0,007	0,008	0,008	0,008	0,008	0,008	0,007	0,41	0,41	0,41	0,41	-0,004	-0,004
6	3014267538	08.07.99	10:32:18	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,007	0,4	0,4	0,4	0,41	-0,005	-0,005
7	3014267541	08.07.99	10:32:21	0,02	0,02	0,02	0,018	0,02	0,019	0,018	0,016	0,4	0,41	0,41	0,4	-0,004	-0,004
8	3014267543	08.07.99	10:32:23	0,025	0,026	0,024	0,022	0,021	0,028	0,026	0,023	0,41	0,41	0,41	0,41	-0,003	-0,003
9	3014267547	08.07.99	10:32:27	0,049	0,05	0,046	0,041	0,038	0,034	0,031	0,028	0,39	0,39	0,4	0,41	-0,003	-0,002
10	3014267550	08.07.99	10:32:30	0,015	0,014	0,013	0,013	0,012	0,012	0,011	0,011	0,4	0,4	0,4	0,4	-0,003	-0,003
11	3014267552	08.07.99	10:32:32	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,43	0,43	0,42	0,42	-0,003	-0,003
12	3014267555	08.07.99	10:32:35	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,008	0,4	0,41	0,4	0,41	-0,003	-0,003
13	3014267558	08.07.99	10:32:38	0,008	0,008	0,008	0,008	0,009	0,009	0,009	0,009	0,39	0,41	0,39	0,4	-0,003	-0,002
14	3014267561	08.07.99	10:32:41	0,012	0,013	0,012	0,012	0,007	0,007	0,008	0,007	0,41	0,41	0,41	0,4	-0,003	-0,003
15	3014267564	08.07.99	10:32:44	0,004	0,004	0,005	0,005	0,005	0,005	0,006	0,006	0,4	0,4	0,41	0,41	-0,004	-0,003

Under the Save label you can choose whether to store the online values, or just the average values. Selecting **Average Values** results in much smaller file sizes, but records less data, of course. If you need to capture to disk every sample that is taken, select **Online Values** here.

*Note: When recording average values, calc-1 through calc-6 are not captured. Record Online Values to acquire calc-1 through calc-6 channels!*

### 3.6 Load / save setup

These buttons allow you to quickly load an existing setup, or to save the current one to a file for later recall. Click on either one and the standard Windows dialog box for either loading or saving appears. Use the normal Windows procedures for selecting / naming a file. The Load Setup dialog box is just below for your reference:



### 3.7 Other buttons on the setup screen



**OK** - takes you back to the main screen, saving your changes

**Cancel** - takes you back to the main screen, NOT saving your changes

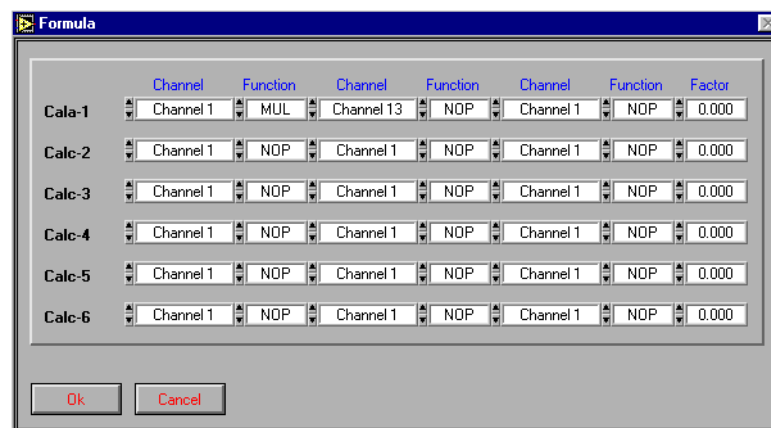
**Copy / Insert / Delete** - described above, for quick channel copy/paste operations

**Formula** - for setting up your 6 calculated channels (see below)

**Config** - runs the DEWEConfig program where you can set up your PAD modules

### 3.8 Formula setup for calculated channels

You can create up to 6 channels which are derived from combining the other channels plus a constant, in a wide variety of mathematical expressions. As described earlier, you might want to multiply two channels together to create a third channel. Click on the **Formula** button on the PADLog setup screen in order to access the Formula Setup Screen:



# PADLog

In the example above, we have created one calculated channel. Calc-1 is derived by multiplying the voltage channel 1 by the current channel 13, which gives us power.

**Channel** - choose the channel by name using the spinner button to the left

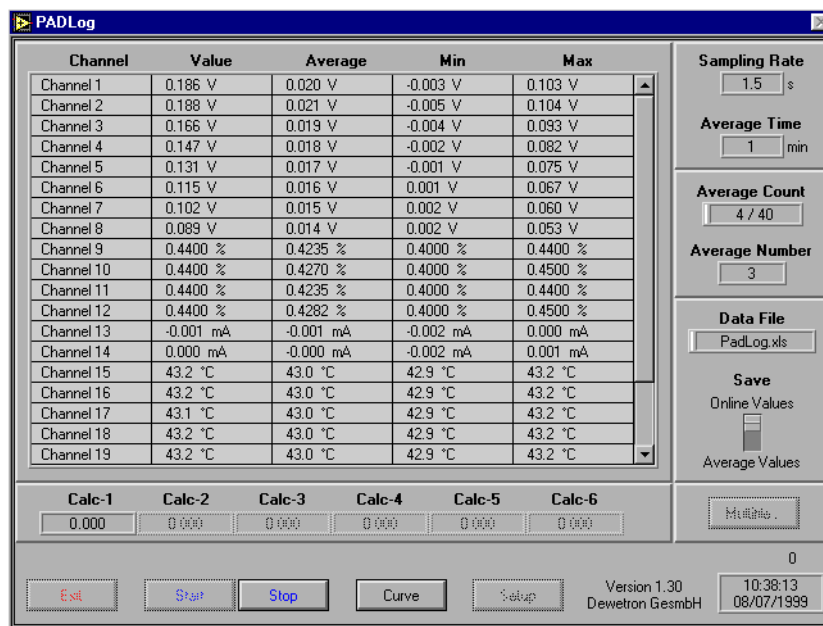
**Function** - choose the math function (addition, subtraction, multiplication, or division ) to apply to the channels on either side of the function. The equation is processed from left to right. To disable or turn off a function, select "NOP" (no operation).

**Factor** - this is where you can enter a constant to be applied by addition, subtraction, multiplication, or division.

Click **OK** when you are done to return to the Setup Screen. Click **OK** there to return to the main screen. When you **Start** recording data, these formula channels will be shown as Calc-1 through Calc-6. They will also be stored with the data.

## 4. Recording your data

The PADLog main screen is where you start and stop the acquisition, and choose whether to view the spreadsheet (table) or graph (up to 5 channels in a strip chart fashion). You can see in the picture below that PADLog is running, recording our 22 channels. One of the Calc/Formula channels is also running, performing on-line calculations per our formula.

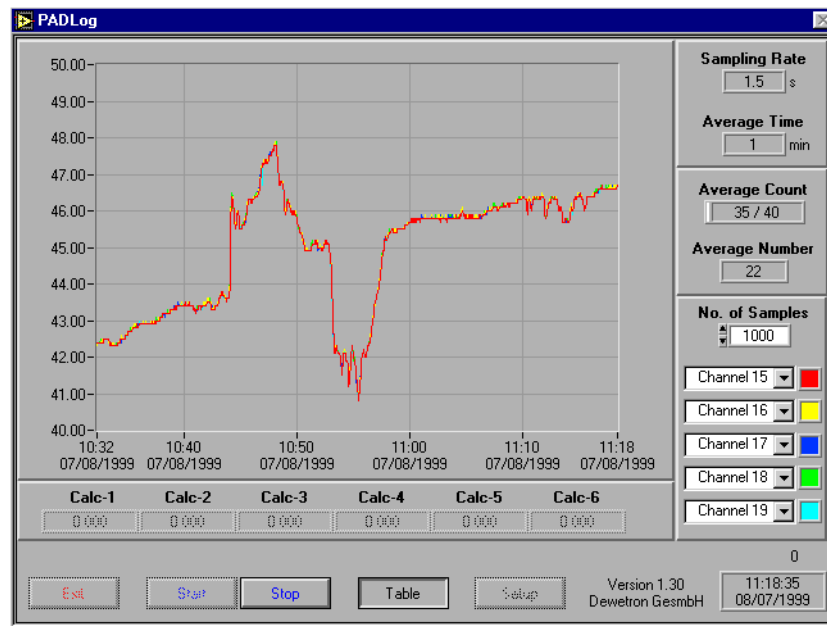


When PADLog is acquiring data, the only two active buttons are

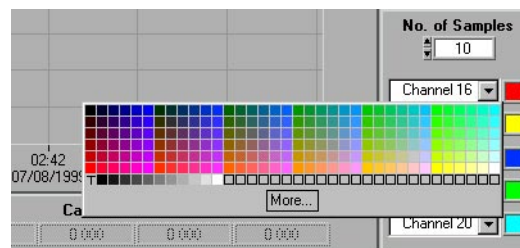
**Stop** - Stops the acquisition

**Curve** - Switches to showing a strip chart presentation. We will cover this next.

## 4.1 The curve / strip chart screen



You may select any five channels for presentation here. Just click on the channel name to see a drop-down list, and make a new selection. Channels can be assigned in any order, or even duplicated. Each channel is automatically assigned a distinctive color for identification purposes. You can change these colors by simply clicking on the color square itself:



Setting the X-axis (horizontal, or time axis) is done by selecting the **Number of Samples** to be shown across the X scale (see picture above). If you are running at a 1 s sample rate, then selecting 120 samples will give you a 2 minute X-axis scale. You can enter numbers well into the thousands here (click and type directly or use the spinner control), so you can set quite a large time scale.

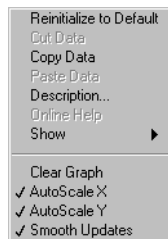
Setting the Y-axis (vertical, or amplitude axis): Often the default Y-axis scaling is not correct for your signals, and you will see nothing here. It is easy to change, either manually or automatically.

- Manually changing the Y-axis display scale: Click and select the highest number in the Y-axis scale. Type in any other number (50 in the example above). Do the same for the lowest number on the Y-axis scale. In this fashion you can directly set the from/to amplitude points of the Y-axis scale.
- Automatically Scaling the Y-Axis: The system can autoscale the Y-axis for you. You must RIGHT-CLICK anywhere within the graph, and a context-menu will pop up. Select "Autoscale Y" from this menu by right-clicking it. The menu will disappear and the chart will

# PADLog

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be autoscaled on the Y-axis. Note that autoscaling will operate on all 5 channels shown, so if you have a channel around 0 and another one around 5000, the scale will be really broad. You can selectively disable some channels (this has no effect on the data being recorded to disk) for visualization purposes.



## 4.2 The context menu selections

There are many "hidden" display related features within these context menus. Please experiment with them all to see what they do. Not all features are implemented fully; they are described only for your reference.

**Reinitialize to Default** - Sets the display back to its default settings

**Cut / Copy / Paste Data** - Not implemented

**Description** - Not implemented

**Show** - Reveals a submenu containing several more graphical widgets for your chart display (see below more for information)

**Clear Graph** - Removes all data (does not stop recording)

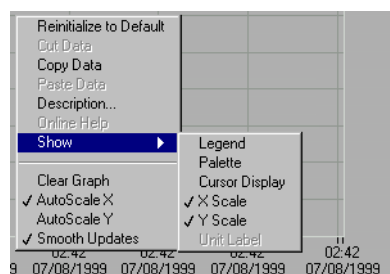
**Autoscale Y** - as described above

**Autoscale X** - not fully implemented. Use the "No. of Samples" field to select how many samples are spread across the T axis (X axis)

**Smooth Scrolling** - Enabled by default, makes the chart graph scroll more smoothly.

## 4.3 The show context submenu

This submenu of the display context menu has a few useful features and a few that are not fully implemented yet. We can make no warranty about these features, so use them at your own risk:



**Legend** - Not fully implemented, allows you to change the line style, plot type, and other visual parameters of the display. More about this below.

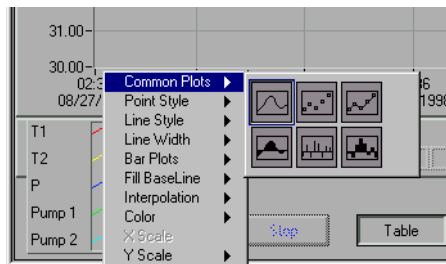
**Palette** - Not implemented yet

**Cursor Display** - Not fully implemented, pops up two cursors which you can place on the chart.

**X Scale** and **Y Scale** - Enabled by default, this means that the actual scales will be shown on the display.

## 4.4 Legend

When you select this from the SHOW menu, a small legend appears on the display, from which you can select various aspects of each input's visual appearance. Since this is not really implemented in this version, we include this information only for reference purposes only.



Be cautioned that these settings may not be saved with the setup, and will be lost when you exit. However, they may prove useful in a few isolated cases, even before they are really implemented.

PADLog was meant to be a low-cost, no frills acquisition program!

## 5. Notes

# DEWEDaq driver for DASyLab

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## 1. Installing DEWEDaq driver for DASyLab

The DEWEDaq driver for DASyLab is already installed on any DEWE-2000, DEWE-3000 or other PC-based data acquisition system with DEWE modules and DASyLab data acquisition software.

The installation of this driver is only necessary when you use your own PC, DASyLab and DEWE modules. In this case you have to follow the instructions below.

### 1.1 Install DASyLab 5

Install DASyLab to the default directory (C:\Program files\DASyLab 5.0 for the english version, C:\Programme\DASyLab 5.0 for the german version), start the program and quit it.

This procedure creates a file called DASyLAB.INI in the DASyLab program folder (mentioned above).

### 1.2 Copy driver to DASyLab folder

There are two files required to use the DEWE modules driver in DASyLab 5:

DASyLab (english version): DEWETR\_E.DLL  
DEWEDAQ.INI  
DASyLab (german version): DEWETRON.DLL  
DEWEDAQ.INI

You will find this files on CD in the DASyLab driver directory. Open the Windows Explorer and copy the corresponding two files into your DASyLab program folder.

### 1.3 Register driver in DASyLAB.INI file

Open the DASyLAB.INI file with your Windows Explorer. The first lines of this file should look similar to the following example:

```
[Hardware]
Driver=Demo32_E.DLL
NI_D32_E.DLL=National Instruments: AT-MIO Series
DEMO32_E.DLL=Demo Driver
[Extend]
DLL1=DLAB_UX1.DLL
DLL2=DLAB_UX2.DLL
DLL3=DLAB_UX3.DLL
DLL4=DLAB_UX4.DLL
DLL5=DLAB_UX5.DLL
DLL6=DLAB_UX6.DLL
DLL7=DLAB_UX7.DLL
DLL8=DLAB_UX8.DLL
[Directories]
Flowchart=C:\Program Files\DasyLab 5.0\Worksheets
Disk Streaming=C:\Program Files\DasyLab 5.0\Data
Save Data=C:\Program Files\DasyLab 5.0\Data
Device Configuration=C:\Program Files\DasyLab 5.0\Devices
Additional Configuration=C:\Program Files\DasyLab 5.0\Others
```

# DEWEDaq driver for DASyLab

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The [Hardware] section contains the driver used in your system. In this example, the current driver is the demo driver, which requires no hardware.

The [Extend] section contains special drivers, like also our DEWE modules driver. Up to 8 files can be embedded. The default file name is DLAB\_UXx.DLL.

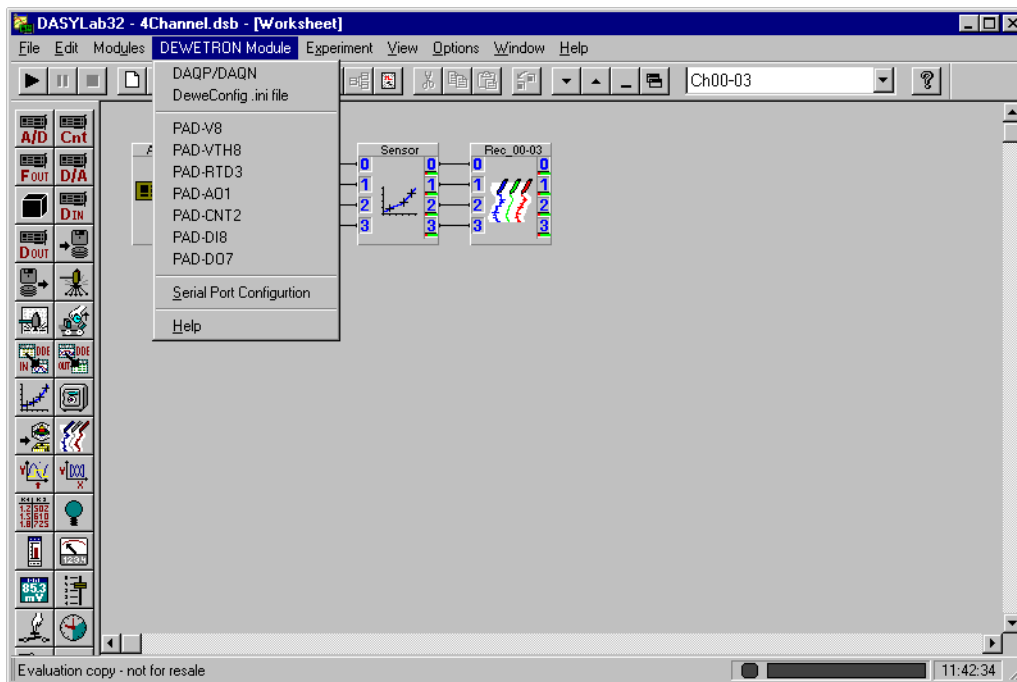
Replace one of this lines as follow:

English version of DASyLab:      DLL1=DEWETR\_E.DLL  
German version of DASyLab:      DLL1=DEWETRON.DLL

When DLL1 is occupied by another driver, use the next free number (e.g. DLL3). Save the modified DASyLAB.INI file. After this procedure, the DEWE modules driver is available in DASyLab 5.

## 2. Using driver in DASyLab

When the driver is installed correctly, DASyLab has an own menu for **DEWETRON Modules**.



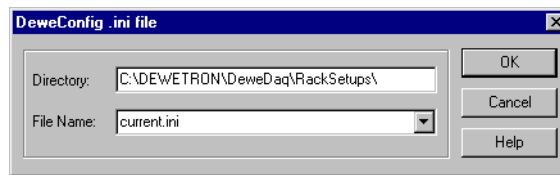
### 2.1 Define DEWEConfig setup path



First of all, the file path for the DEWEConfig rack setup file has to be defined. As a standard, this file is in C:\DEWETRON\DEWEDaq\RackSetups and there is no need to change. Only when you create your own configuration files, you can change file name (and path) in this menu.

# DEWEDaq driver for DASyLab

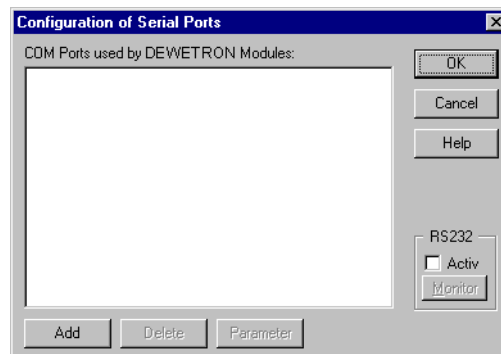
---



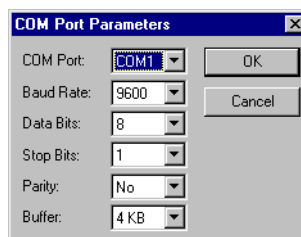
Always when you are creating a new DASyLab worksheet, the DEWEDaq driver looks into this file and reads back the current module settings from DEWEConfig program.

## 2.2 Configure COM port for DAQP and PAD modules

The DEWEDaq driver offers the possibility to change ranges and filter of DAQP and PAD modules via RS-232/485 interface. When your system contains DAQP and / or PAD modules, you have to define the used COM port.



Use **Add** to add new COM port or select a COM port and press **Delete** to remove the port (highlight by clicking on it) from selection list. The COM port is the same used in DEWEConfig (see chapter 2). Independent from the COM port, you have to set baud rate to 9600, 8 data bits, 1 stop bit and no parity (standard values). Otherwise the modules are not responding:



When you want to change current parameters, use the **Parameter** button.

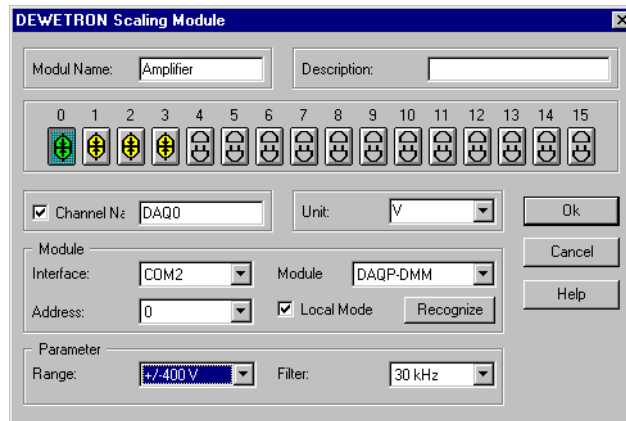
# DEWEDaq driver for DASyLab

---

## 2.3 Working with DAQN and DAQP modules



The DAQP/DAQN module offers the possibility to define the used module for each input channel, including the input range scaling. For example, using a DAQP-DMM module looks like this:



First you have to check, if the correct module is selected in the Module section. In the example, we use a DAQP-DMM module on COM2, address 0. This information comes from the DEWEConfig software, which should be configured correctly before.

To be sure that the communication is working, you can press the **Recognize** button, and DASyLab is reading the current setting from module. The result can be different when you have changed settings, for example with the push buttons, and not stored it up to now in DEWEConfig.

Use the **Local Mode** button to unlock the push buttons on the modules; In this case, it is possible to change range or filter settings with push buttons. To be save that changes are not done during the measurement, we recommend switching not to local mode.

**Range** and **Filter** show the current module setting. When you want to use another input range or filter frequency, just click on this buttons and change it. This information is also stored together with the DASyLab worksheet. Using the worksheet after some time will set the modules automatically to the correct settings.

*Note: All values are written into the DEWE module after starting the experiment (F5)*

Repeat this steps for all required input channels. For DAQN modules, you don't have to worry about COM port or address - just select corresponding input range.

*Note: When you are using a sensor, connected to the modules, you have to scale the sensor in an additional module (Modules - Mathematics - Scaling).*

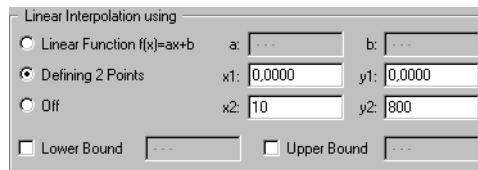
*Example: DAQP-V module with 0 to 800 A current clamp (10 mV / A output factor)*

1. Set module input to 10 V
2. Use a linear scaling module

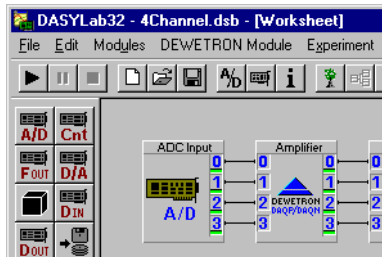


3. Define 2 points:  $x1 = 0.0$                        $y1 = 0.0$   
 $x2 = 10.0$                                        $y2 = 800.0$

# DEWEDaq driver for DASyLab



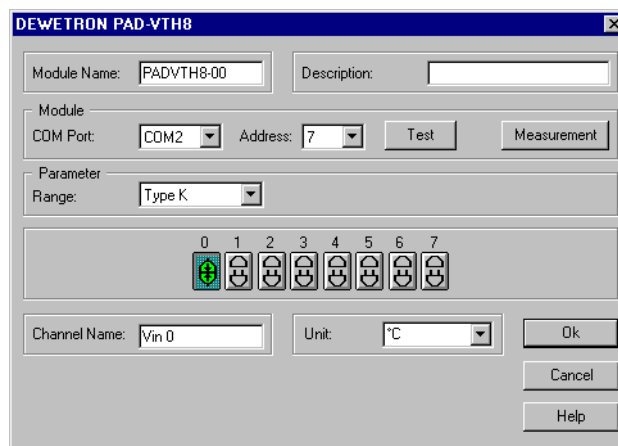
*Note: The DAQP/DAQN module still requires an analog input module (ADC input)!*



## 2.4 Working with PAD modules



For each type of PAD module, an own module is available. The configuration of the PAD-VTH8 module looks as follows:



First you have to set the correct COM port (which is the same then using DAQP modules) and module address. Press the **Test** button for verifying or **Measurement** to get a first readback from module.

In the next step, you have to define the required input channel, the name and the input range. Again, the **Measurement** button is helpful to test input range. The information about the input range is defined by the DEWEConfig software and is the same for all input channels.

*Note: Changing of DEWEConfig settings or exchange of modules will not be communicate to DASyLab automatically!*

# DEWEDaq driver for DASyLab

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When all settings are done, press the OK button and use the module as any other one. All settings are stored together with the worksheet. Using the worksheet after some time will set the modules automatically to the correct settings.

*Note: As opposed to DAQP/DAQN module, the PAD-xxx module is a direct input module and requires no other input modules.*

## 1. About DEWETTerminal

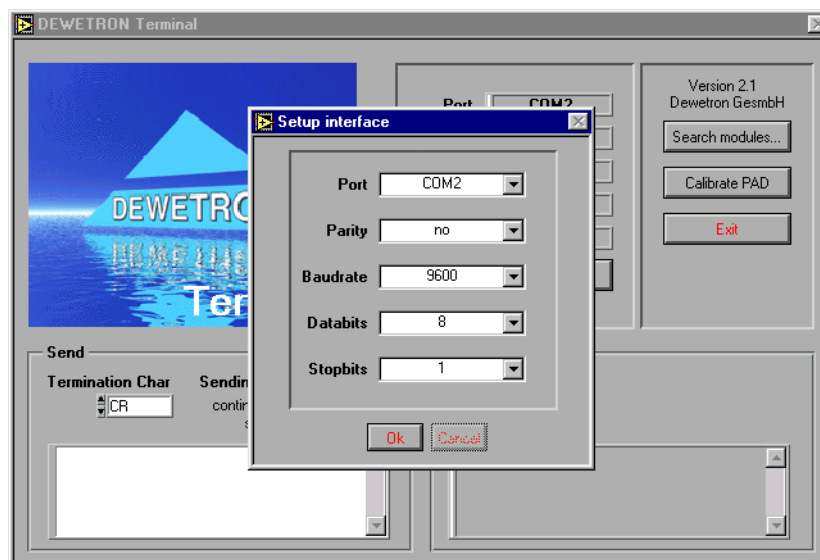
DEWETTerminal is a tool to supervise a COM port. This tool can be very helpful on support requests for PAD modules.

## 2. Installing DEWETTerminal

The DEWETTerminal program is already installed on any DEWE-2000, DEWE-3000 or other PC-based data acquisition system with DEWE modules.

The installation of this driver is only necessary when you use your own PC, DASyLab and DEWE modules. In this case you have to follow the instructions of the INSTALL.EXE program.

## 3. Using DEWETTerminal



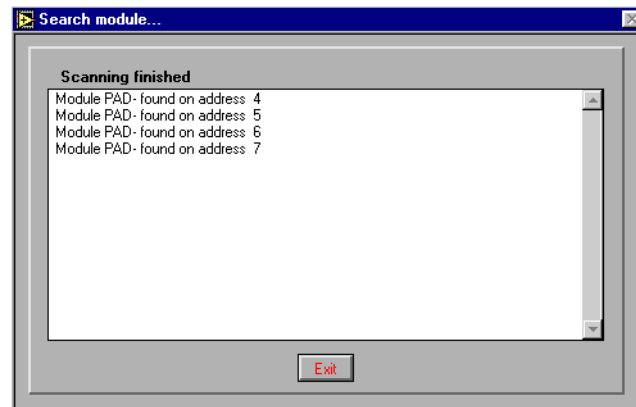
The program welcomes you with a message box, where you select the COM port and port settings used for the DEWE modules. Select correct COM port (see also DEWEConfig) and set baud rate to 9600, 8 data bits, 1 stop bit and no parity (standard values).

The **Send** area is used to send free defined string to the COM port in single or continuous mode. The response is displayed in the **Receive** area. This part may be used for standard communication, especially with DAQP modules.

For PAD modules, you can use the **Search modules** button. In this case you will get a list with the PAD modules found in your system.

# DEWETerminal

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Press **Exit** button to leave the program.

As the program is just designed as a support help tool, you will be guided through the program by our support group when necessary.