ROGA Instruments
INTELLIGENT TESTING EQUIPMENT
www.roga-instruments.com

RogaDAQ 2

Portable Data Acquisition and Analysis

RogaDAQ 2 *is a high performance portable Data Acquisition Device. It features two high quality, high speed, simultaneous sampling inputs.*

The RogaDAQ2 USB DAQ is developed for highly accurate measurements in the T&M and also for NVH measurements. This USB Front End is optimized for noise and vibration measurements with 2 channel IEPE (ICP®) sensor supply.

Main feature of the RogaDAQ2 is the driver and free software concept. Special drivers are not needed ; the unit is detected by the PC as standard Soundcard.

Measurement programs like ArtemiS, Audacity, Cooledit, DASYLab, DEWESoft, DiaDem, LabView, Levelcheck, MatLab, PAK by Müller BBM, RogaREC, Smaart works directly in real time.

The RogaDAQ2 supports as first NVH USB Soundcard on the market, measurements from 0 Hz up to 20 kHz and IEPE sensor supply. Range input is fixed to +- 5 Volt.

TECHNICAL DATA:	
Analog-Inputs	2 BNC-Inputs, for analog signals
Simultaneously sampling ADCs	2
Resolution	24 Bit
Sampling rate	48 kHz max.
Range input	± 5 V
Selectable AC- or DC-coupling	
Selectable IEPE sensor	supply (4 mA/28 V)
Self adjusting Anti-Aliasing filter	
Accuracy	better ± 0,1 dB, Dynamic Range > 100 dB, THD < 0,005%, Frequency Response ± 0,05 dB
Channel deviation	< 0,01 dB, < 0,05°
Channel separation	> 85 dB
Supported PC Systems	All

RogaDAQ2 is available including FFT Analyzer Software, Sound levelmeter and Modal Analysis Program.

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DASYLab®

Data Acquisition System Laboratory

DASY-Lab *is a versatile application system for all tasks in measurement, control, regulation and automation .*

Equipped with a wide range of software and hardware interfaces you only need DASYLab to reliably record, analyze, visualize and further process signals of all types.

DASYLab stands out due to its strikingly simple method of use: measurement engineering applications are intuitively and interactively designed and displayed graphically in the form of a dataflow diagram without any programming at all.

The function modules required for a specific task are placed in the circuit diagram, linked to other modules and adapted to the current task using structured configuration dialogues.

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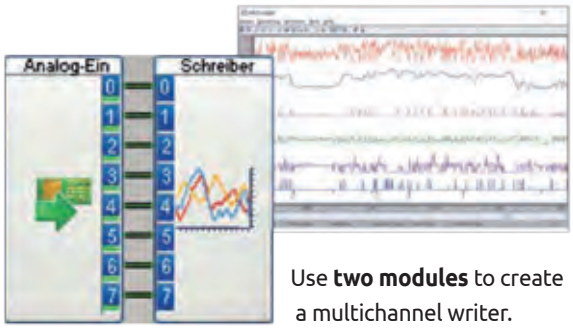
Boundles flexibility due to more than 120 default modules for creating your specific application.

A wide spectrum of analysis, control and visualization modules are available for creating the application, these range from measurement engineering single functions up to preconfigured standard sequences. These include analog and digital inputs and outputs, triggers, mathematics, statistics, digital filters, FFT analyses, buttons, switches and much more.

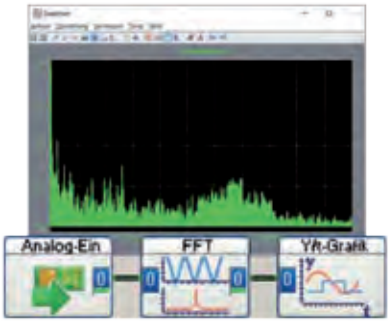
On top of this, you can comfortably develop and incorporate your own exten- sions using the integrated Python inter- face. Everything is possible.

DASYLab is available in four extension levels, so that both beginners and experienced users can implement measurement and test sequences to meet their requirements.

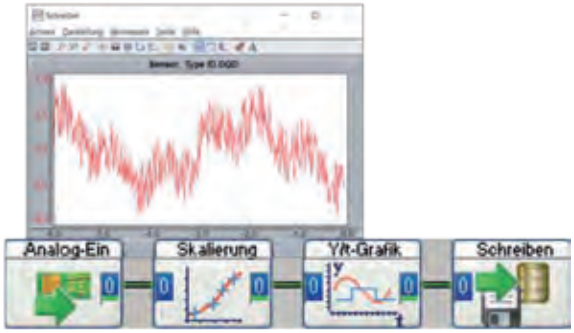
Use just one **single module** to create a datalogger.



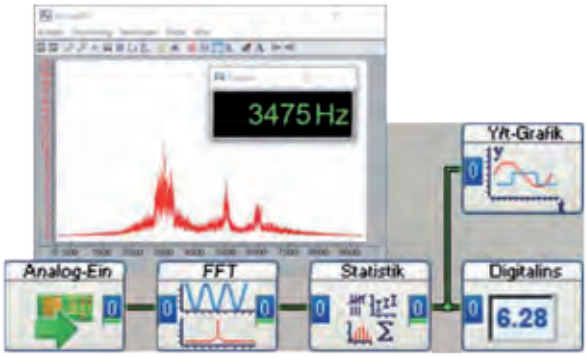
Use **two modules** to create a multichannel writer.



Use **three modules** to create an oscilloscope with FFT signal evaluation.



Four modules are required for a measurement sequence, which fulfils the basic requirements on almost any measuring task.



Five modules are required for data acquisition with FFT signal evaluation, statistics function and results presentation.

Its simplicity and its wide applicability make DASYLab since 1993 one of the leading applications in education, research and engineering for industry, production and quality management.

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With DASYLab you are not only capable of capturing and visualization of measured data ...

Your PC interface is turned into the measuring instrument interface each time, and it can be individually configured and designed. DASYLab supports data acquisition hardware from numerous manufacturers and offers a wide range of established software interfaces and protocols. External measuring devices are contacted and configured in a simple manner directly via function modules. Up to 512 channels per measured value acquisition are possible depending on the hardware used..

DASYLab can read or write data which has either been processed by the measX **X-frame** application or by the National Instruments **DIAdem**.

... you are also up to a powerful online signal analysis!

DASYLab offers a wide range of functional modules for signal processing, mathematics and to statistics in order to work out the properties of the recorded signals simply yet precisely.

Even specific modules for third and octave analysis and for convoluting and weighting signals are offerd by DASYLab.

DASYLab supports:

- analog and digital inputs and outputs, counter input and frequency output
- CAN bus and LIN bus
- RS-232
- IEEE-488
- ModBus/RTU
- OPC-DA
- SPS
- ODBC

Automating measuring sequences without programming

Automation tasks are solved graphi-cally with DASYLab without programming. To do this, the software provides a range of function modules such as signal generators, switches, controllers and function generators. The corresponding modules are placed and configured in the circuit diagram so that logic switches, controls and analyses can be implemented.

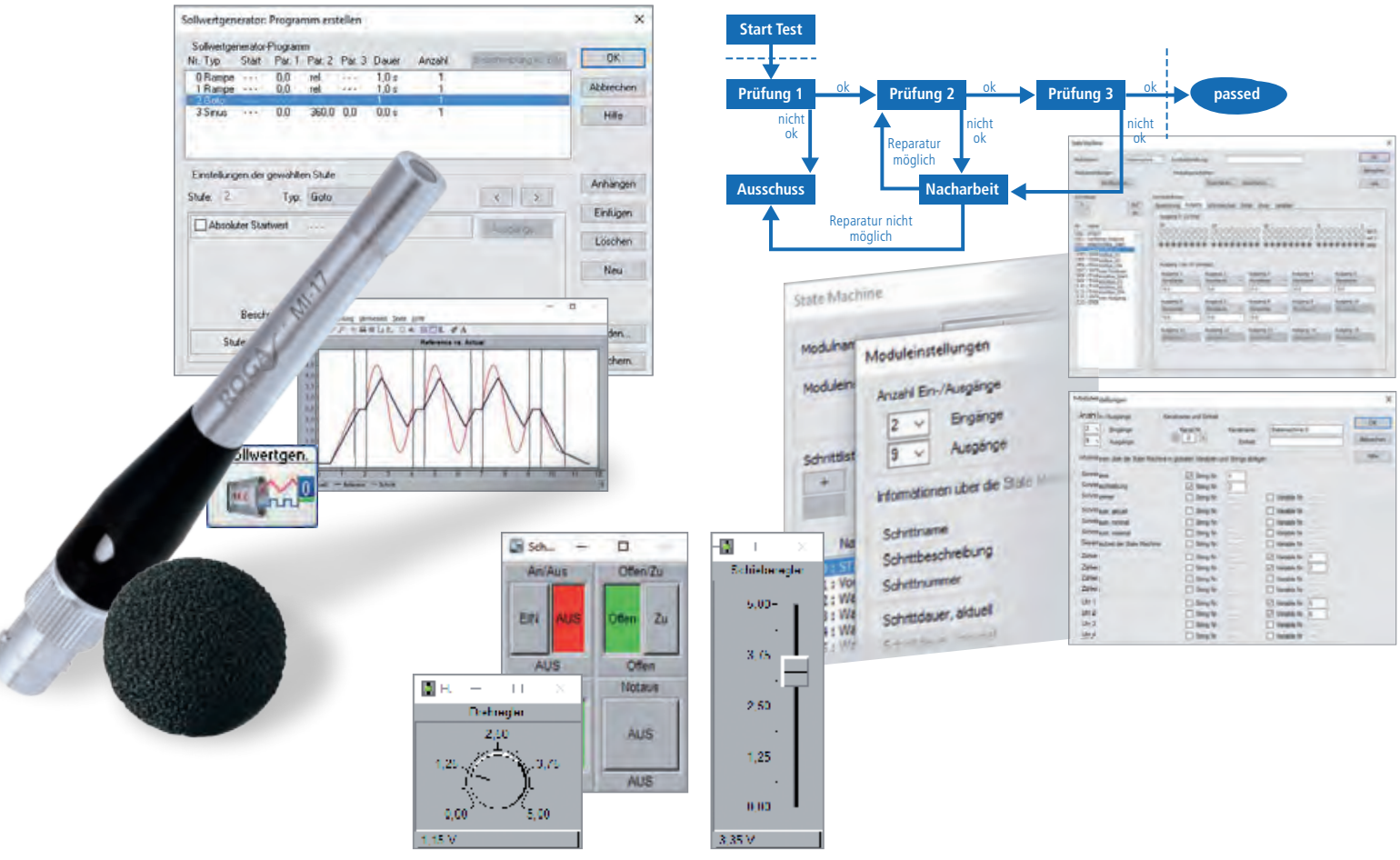
DASYLab can read or write data for further analysis which can either been processed by the measX **X-frame** application or by the National Instruments **DIAdem**.

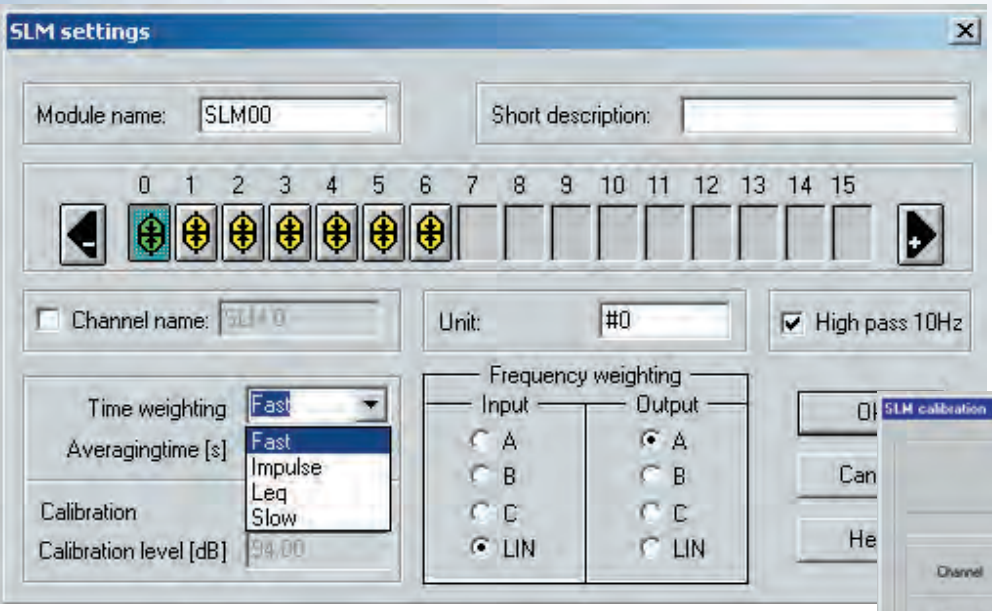
Sequence Generator as highlight

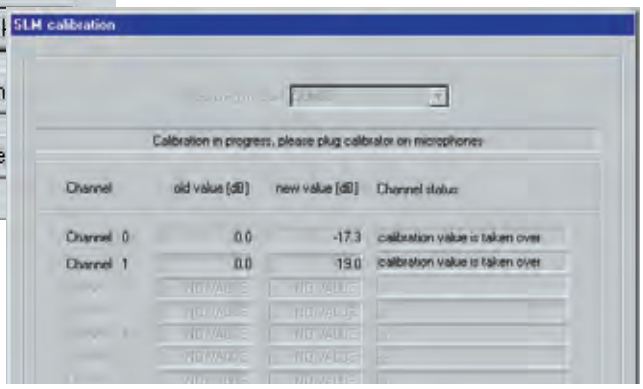
A configurable sequence generator is provided for precise time-dependent controls with complex control signals. It creates the sequence profile using simple parameterization of the individual program stages, which, for example, you use for controlling your test bench. This means that switching processes are implemented synchronously with this control profile.

State Machine as highlight

Complex test sequences, which can be set up using a combination of action modules, trigger modules, relays and links as an alternative can be compiled to form fewer modules using the state machine module. These sequences are particularly simple to create and maintain since stages within the module can be added, deleted or changed in their sequence as required.
When setting up a step sequence conventionally in DASYLab, all the modules are always processed simultaneously in parallel – especially the parts of the step sequence which are not actually needed at that moment. In comparison, only the active parts of the step sequence are processed in the state machine module since all decisions about the work stage are made using one single module. This results in a considerable decrease in computing time and memory requirement.





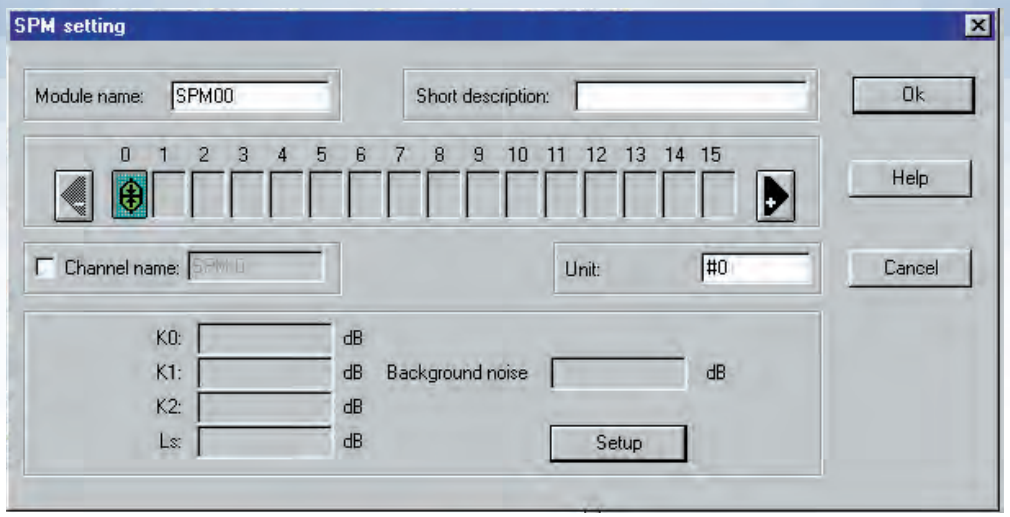


RogaDAQ16 in combination with MI-17 as a recommended hardware.

Sound Level Measurement Modul

The sound level measurement module has the following features:

- Time weighting: fast, slow, impulse, leq following DIN IEC 651 and DIN IEC 804.
- Easy microphone calibration with a pistonphone; in calibration mode, DasyLAB 6 detects the channel/ microphone to calibrate and calculates the correct values.
- The correction values are stored with the worksheet.
- The module has 16 inputs and 16 outputs for the weighted and dB scaled sound levels.
- We recommend a 16 bit AD-converter with microphone power supply.



Sound Power Measurement Module

The sound power measurement module can calculate the sound power for a maximum of 16 input channels (from the sound level measurement module) 1 output channel, switchable to:

• Measurement surface sound power.
• Sound power level (SPL) of all active channels.

The module properties allow you to set the four corrective values in dB or use the “wizards” to determin them:

K0: Correction value for air pressure and temperature. Direct input of the dB value or pressure and temperature. (Only necessary for class 1 measurements according to DIN 45 635.)

K1: Correction value for extraneous noise correction (background noise, signal-to-noise-ratio). Direct input of the dB value or taken from last measurement.

K2: Correction value for environment feedback (reflections). Direct input of the dB value or input of the room’s metrics:
– volume
– reverberation time ...

Ls: Correction value for for the enveloping surface. Direct input of the dB value or input of the surface metrics (guided with graphics). Like DIN (2a, 2c, b)
– Spherical, hemisphere, quarter globe
– Cuboids (detached, at a wall, at a wall and ceiling)

The module works according the following standards: DIN 45 635, DIN EN 23 741, ISO 3741, DIN EN 23 742, ISO 3742, DIN EN 23 744, EN ISO 3744, DIN EN 21 680, ISO 6395

python

Creating your own DASYLab modules

Right from the start DASYLab provides a wide range of modules for different measurement, control and analysis tasks. If functionalities, hardware or software components over and above this are necessary for an application, these can be integrated by any (program-experienced) user at reasonable expense using the integrated Python interface.

These could be additional input modules or modules for data output, and also special mathematical functions which are not included even in DASYLab despite its wide range of function modules.

Basic settings, for example the number of inputs or outputs and the data flow properties, which are accepted by the module, can be conveniently specified in a presetting wizard. Only the script code needs to be entered in the dialogues for each individual interface in order to specify the functionality of a new module. Module parameters which are to be freely configurable later on are selected from a stock of stipulated dialog elements, and then made editable and compiled to form a simple configuration dialog using a script.

Python script modules can be imple-mented and managed in all DASYLab versions. Users of the Full and Pro version can also create, process and export Python script modules.

Look & Feel to your own specifications

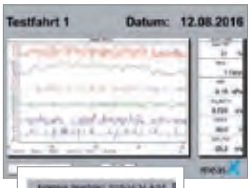
DASYLab offers users a wide range of facilities for designing the working environment to meet their own personal requirements. This applies both to the user interfaces (the so-called layouts) and user guidance through individual applications, and also to the reports and protocols which can be generated.

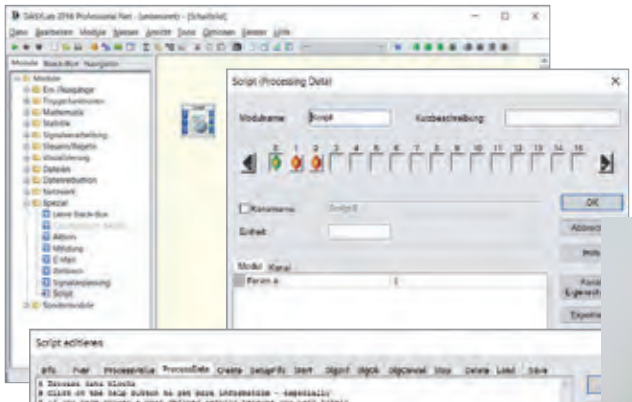
Online visualization

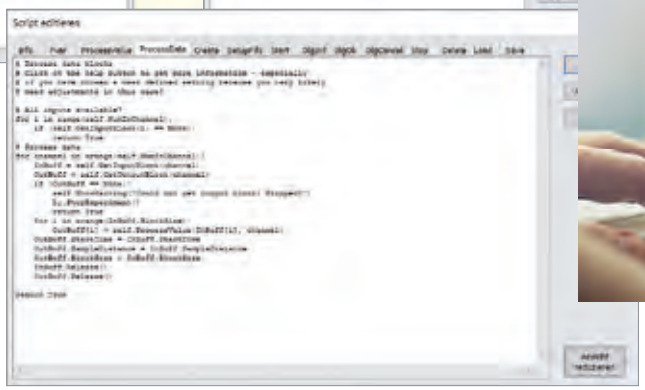
A wide range of control and display modules are available for interface design: these range from standard functions such as the magnified display of graphical signal sequences up to color-coding of numerical display on limit value infringements. You can quickly and simply configure all operating elements and display windows to meet your own requirements by specifically placing the visualization and control modules and providing them with texts and graphics.
Up to 200 different layout pages can be defined with the aid of the integrated layout tool.
You can display your measured data as curves using the writer, Y/t chart and X/Y chart modules. The table and digital instrument function blocks display the recorded measured data numerically. Freely scalable analog instruments, bar and state displays are especially suitable for the presentation of process and test controls.

Reports and documentation

DASYLab can also support you in professional results presentation. The design of log sheets and reports can be flexibly drawn up and configured.







4 DASYLab program versions – the adequate one for each requirement

You can select from four DASYLab program versions:

Lite Version* for newbies contains all the basic functions required for PC-supported measurement data acquisition.

Basic Version with additional mathematical and statistical analysis functions.

Full Version provides you with additional modules for solving basic analysis and automation tasks.

Pro Version provides modules for complex further professional analysis, control and automation tasks.

in addition we offer a standalone **runtime version** that allows execution of existing circuit diagram files (.dsb) but not their change.

DASYLab provides you with an interactive tutorial and more than 150 example files.

MODUL GROUPE / MODUL	LITE	BASIC	FULL	PRO
TRIGGER				
Pre/Post trigger	●	●	●	●
Start/stop trigger	–	●	●	●
Combi-trigger	–	●	●	●
Sample trigger	–	●	●	●
Gradient trigger	–	●	●	●
Relay	●	●	●	●
MATHEMATICS				
Formula interpreter	–	●	●	●
Arithmetic	●	●	●	●
Comparator	●	●	●	●
Trigonometry	–	●	●	●
Scaling	●	●	●	●
Differentiation/integration	–	●	●	●
Logical operations	–	●	●	●
Bit mask	–	●	●	●
Flipflop	–	●	●	●
Gray code	–	●	●	●
Slope limit	–	●	●	●
Create reference curve	–	●	●	●
STATISTICS				
Statistical values	–	●	●	●
Select values	–	●	●	●
Histogram classification	–	●	●	●
Rainflow classification	–	–	○	●
Two-channel classification	–	–	○	●
Regression	–	●	●	●
Numerator	–	●	●	●
Pulse analysis	–	●	●	●
Minimum/maximum	–	●	●	●
Channel sorting	–	●	●	●
Check reference curve	–	●	●	●

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MODUL GROUPE / MODUL	LITE	BASIC	FULL	PRO
SIGNAL ANALYSIS				
Digital filter	–	●	●	●
Correlation	–	●	●	●
Data window	–	●	●	●
FFT	–	●	●	●
Polar/cartesian	–	●	●	●
FFT Filter	–	–	○	●
FFT maximum	–	–	○	●
nth harmonic	–	–	○	●
Electrotechnical parameters	–	–	●	●
Harmonic distortion	–	–	●	●
Periodic calculation	–	–	●	●
Third/octave analysis	–	–	○	●
Resample (order analysis)	–	●	●	●
CONTROLLING AND REGULATING				
Sequence generator	–	–	○	●
Generator	●	●	●	●
Switch	–	●	●	●
Handset control	–	●	●	●
Position switch	–	●	●	●
PID controller	–	●	●	●
Two-point controller	–	●	●	●
Time delay	–	●	●	●
Latch	–	●	●	●
Signal router	–	●	●	●
TTL pulse generator	–	●	●	●
Stop	–	●	●	●
Write global variables	●	●	●	●
Read global variables	●	●	●	●
Write block time in string	●	●	●	●
State machine	–	–	●	●
VISUALIZATION				
Y/t chart	●	●	●	●
X/Y chart	–	●	●	●
Chart recorder	●	●	●	●
Polar plot	–	●	●	●
Diagram	●	●	●	●
Analog display	●	●	●	●
Digital display	●	●	●	●
Bar graph	●	●	●	●
Status display	●	●	●	●
List	●	●	●	●

MODUL GROUPE / MODUL	LITE	BASIC	FULL	PRO
FILES				
Read/write data	●	●	●	●
Backup data	–	–	●	●
ODBC input/output	–	–	●	●
DATA REDUCTION				
Average	●	●	●	●
Block average/peak hold	●	●	●	●
Separate	–	●	●	●
Multiplexer/demultiplexer	–	●	●	●
Shift register	●	●	●	●
Cutout	–	●	●	●
Signal switch	–	●	●	●
Circular buffer	–	–	●	●
NETWORK				
Network input/output	–	–	<->	●
Reports input/output	–	–	<->	●
DataSocket import/export	–	–	●	●
SPECIAL				
Empty black box	–	●	●	●
Action	–	–	●	●
Message	–	–	●	●
Send e-mail	–	–	●	●
Time basis	–	●	●	●
Signal adaptation	–	●	●	●
Create script module	–	–	●	●
ADD-ON MODULES				
Convolution	–	–	○	●
Weighting	–	–	○	●
Transfer function module FRF	–	–	○	●
Universal filter	–	–	○	●
Save universal file	–	–	○	●
OPTIONAL ADD-ONS				
Human vibration (ISO 8041)	–	–	△	△
Sound level	–	–	△	△
Sound power	–	–	△	△
PROGRAM PROPERTIES				
Sequencer Number of layout	–	–	●	●
pages	1	1	200	200

● included
– not included or available
○ included in additional analysis toolkit
△ available as optional add-on
<-> available in NET add-on for the Full Version

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