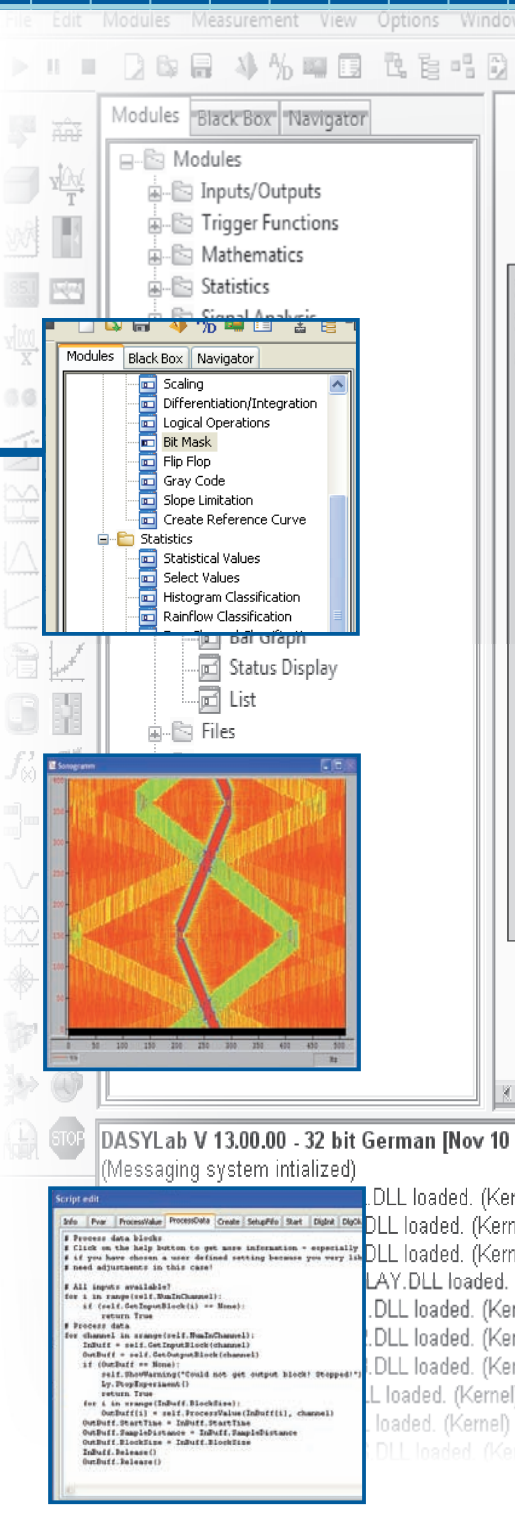
Online Data Acquisition and Analysis

DASYLab® 13

Data Acquisition System Laboratory

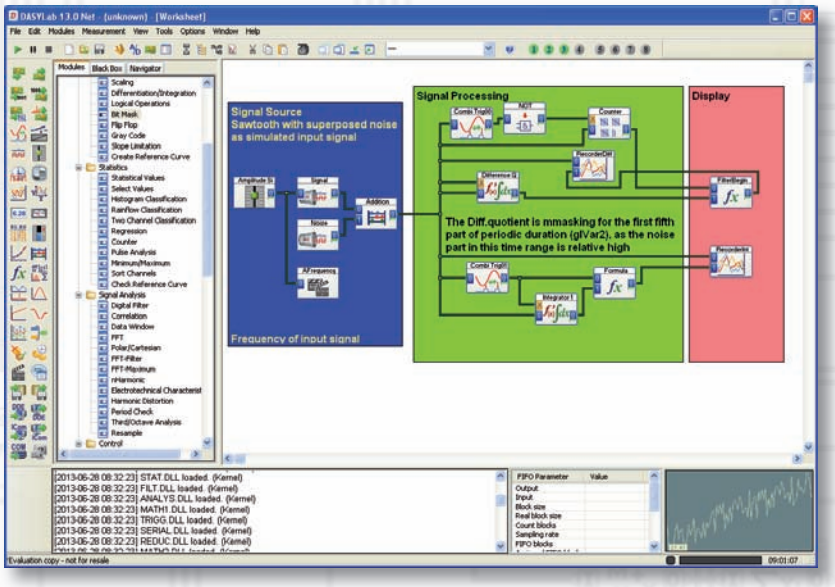


- Measurement and control with Windows™
- Flexible configuration of user interfaces and displays
- Easy generation of protocol and presentation sheets
- Compatible with DAQ hardware of most manufacturers
- Expandable with integrated Python™ Script engine
- Configure and manage the DASYLab resources with the Configurator Tool

python™

easy-to-use – flexible – powerful

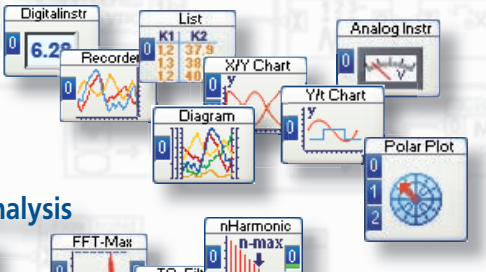
DASYLab Window



Worksheet

The worksheet is where you create the data flow logic for the application. Select and combine the desired function modules and connect them with wires that represent the data flow.
The browser window displays a tree structure containing all available function modules as well as any saved block boxes. It also contains a navigator to quickly find specific modules in a worksheet.
The console window displays graphical and numerical information about content and structure of the data flow.

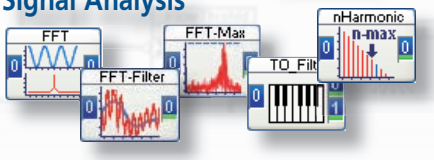
Displays



Function Modules

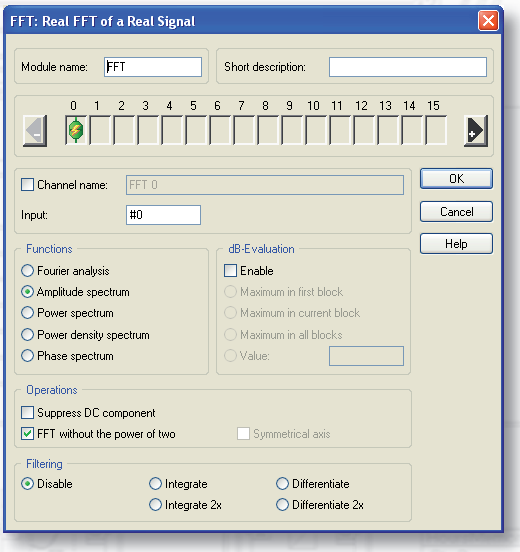
No programming required! Configure your experiment setup easily using the drag'n'drop capability of DASYLab. Pick up the required Function Module from your favorite Modules of the module bar or use the tree of the browser window.

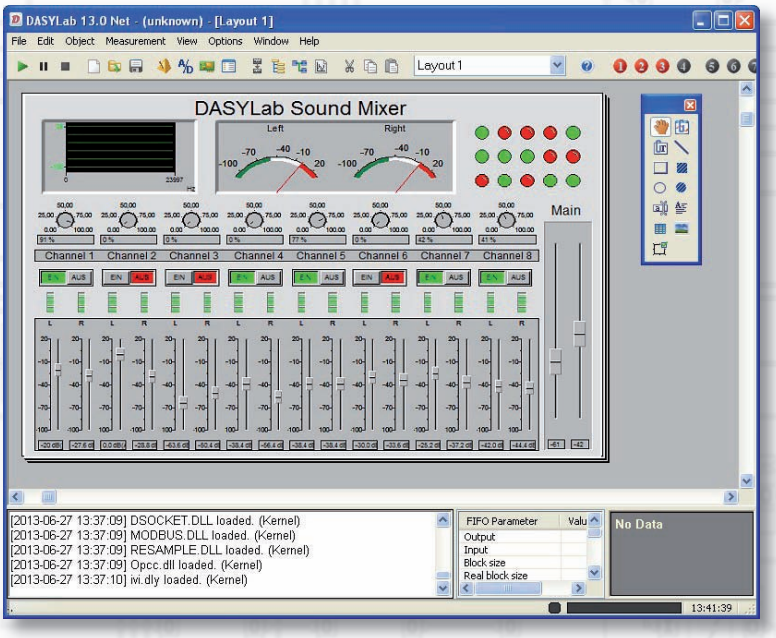
Signal Analysis



Dialogs

Easily configure the Module Properties with straightforward dialog boxes. Specify capability, functions, parameters, the number of channels and other settings, all without programming.

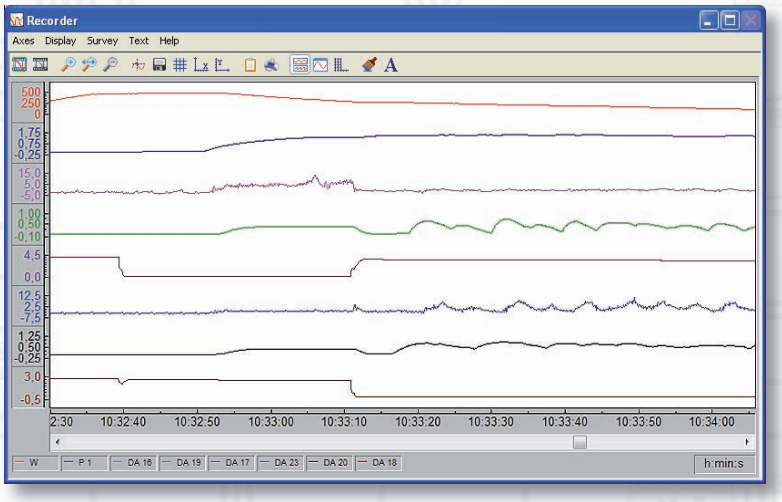




Layouts

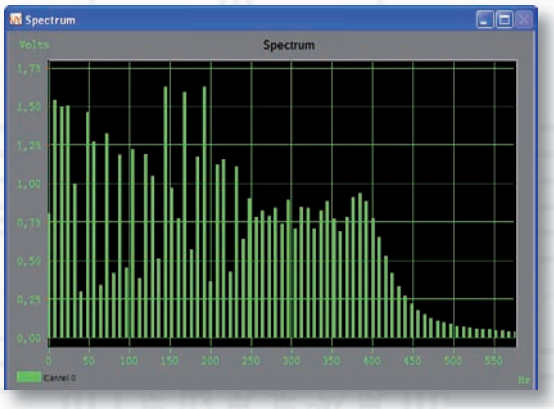
Use the layout view to create the operator interface to work with your application and to define the structure and content of professional reports. For each application you have 200 pages to display your data and results.

Five easy solutions

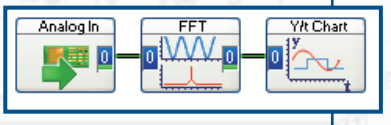


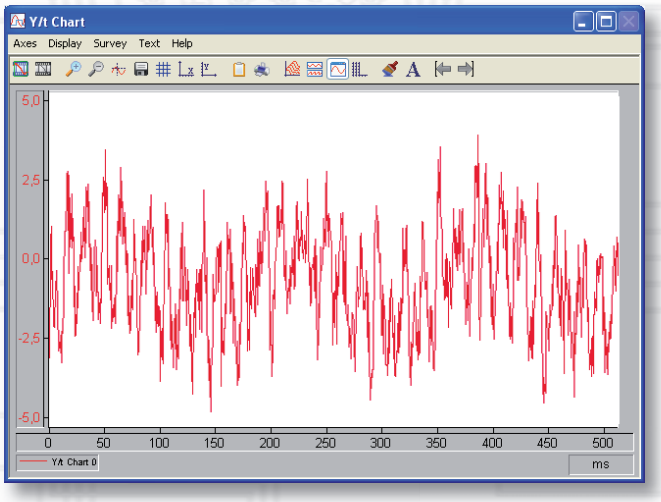
... one module for a data logger ...

... two modules for a chart recorder ...

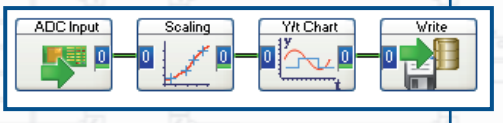


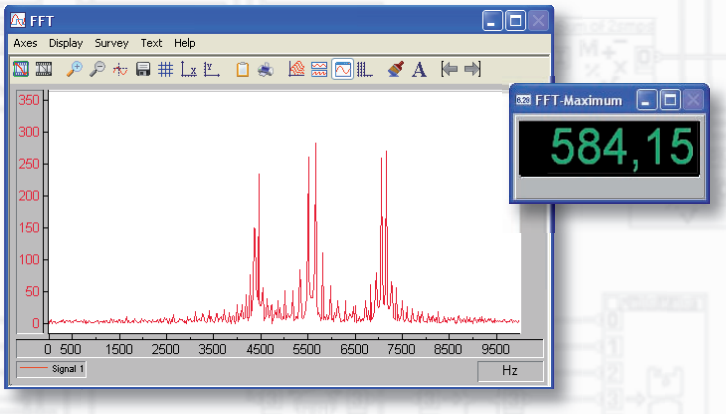
... three modules for a frequency analyser



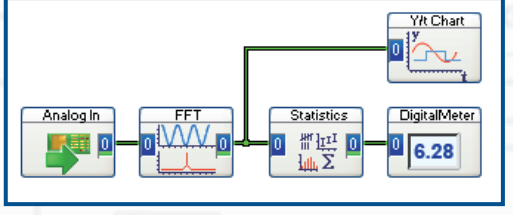


... four modules for a storage oscilloscope with individual scaling ..





... five modules for acquisition, display, frequency analysis and statistics of your data

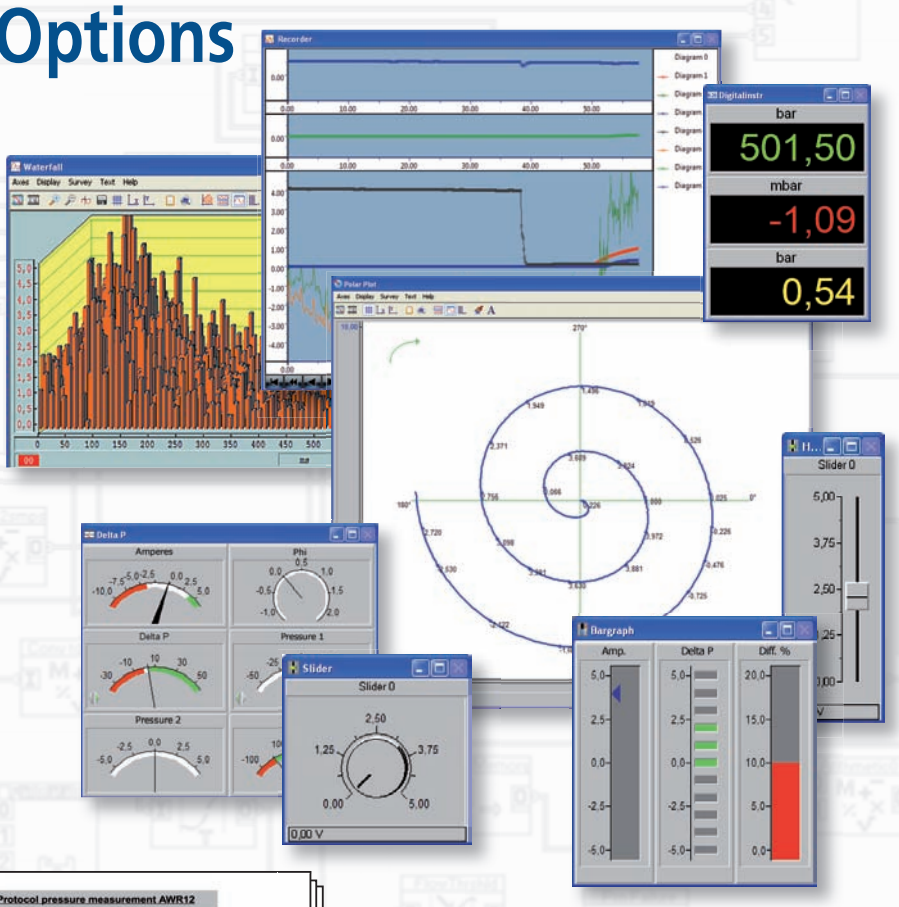


info@dasylab.com

DASYLab Display Options

Displays

Use the different displays in DASYLab to represent your data online. Interactively zoom and view cursor measurements on or off-line..

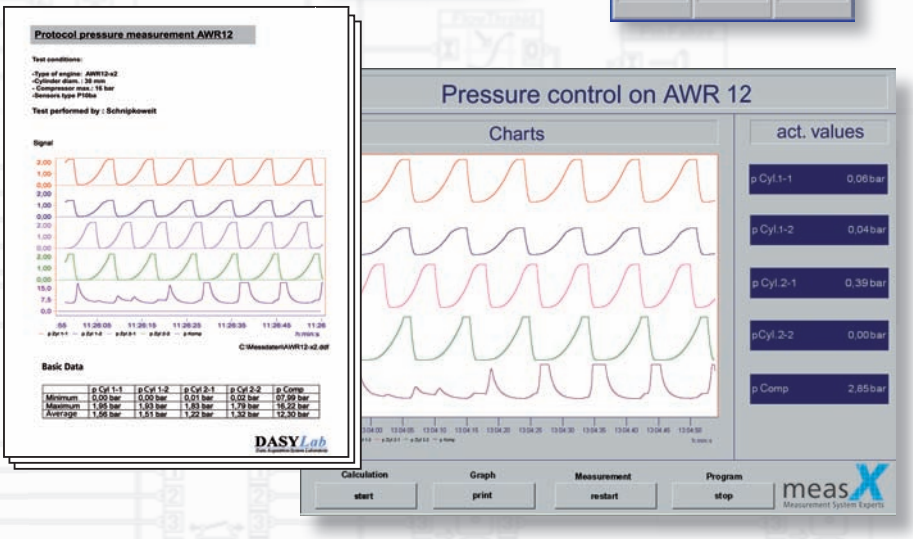


Input Modules

Use the different function modules to create in Layout Windows or on the worksheet screen sliders, switches, or other interactive elements to allow the user changing parameters and values while experiment is running.

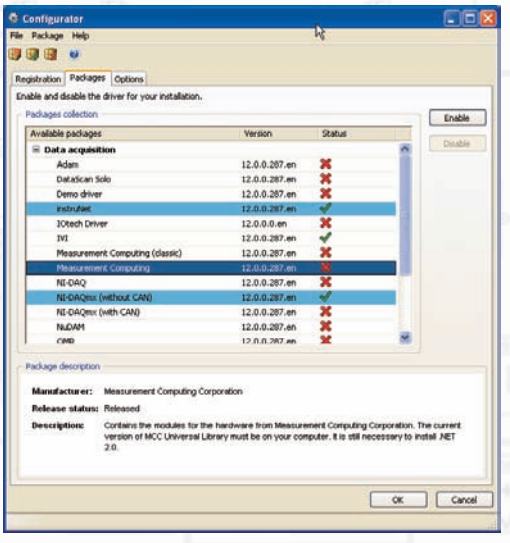
Layouts and Reports

Use the DASYLab Layout tools to create a clear and informative presentation of your data and results. Represent your data in scope displays, numerical listings, chart recorders or bar graphs, just by placing the corresponding objects in the layout and connecting them to the worksheet modules. Use text or graphical elements to enhance the clarity and useability of your application.

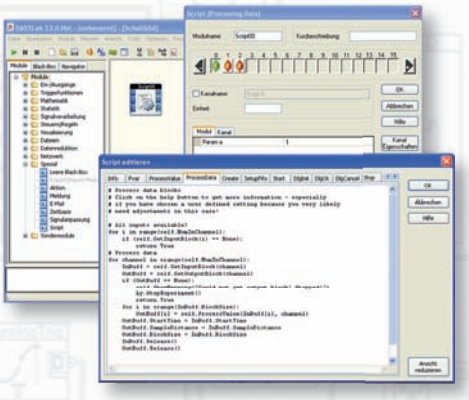


DASYLab Configurator

Use the configurator to manage the DASYLab installation according to your tasks. You can to register drivers for new hardware, to activate the evaluation version with a valid license number, or to upgrade DASYLab. The configurator lists all packages available on your computer. The list includes different hardware drivers and field bus systems. The status indicates whether a package already belongs to the DASYLab installation and the version number indicates how recent the package is. Enable/disable the selected package in DASYLab with one click or remove the selected package from DASYLab. You can import packages which you receive from third-party manufacturers or which you download from the web. Packages contain, for example, all files for a driver, a function extension, or special worksheet collections. You also can update packages because a package with a higher version number can replace the earlier package. DASYLab developers can also use the configurator to create their own packages. Use the package definition, to define files and the actions you need for the installation of your functions.

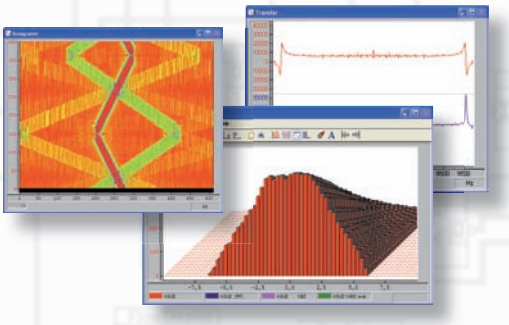


Python Scripting



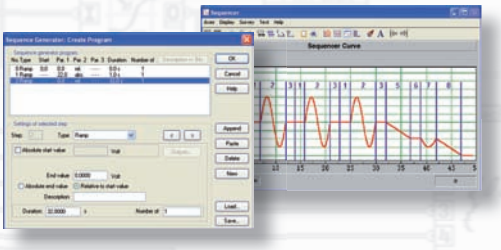
The basic idea of DASYLab - „Easy-to-Use“ - is not lost even with the expansion options. The new script module allows the use of the widely used Python™ scripting language to create your own modules. Basic settings such as the number of inputs or outputs, such as the properties of the data stream which are accepted by your module, and other are managed by a setting wizard. The functionality will also be defined within DASYLab: Simply enter your script into dialogues of the various interfaces that DASYLab offers. Parameters that can be set by users of your module can be selected from a pool of predetermined dialog elements and made editable and compiled by script to a simple configuration dialog. Python script modules can be run in the Lite and Basic versions, the Full and Pro versions also can create and edit. An export function generates modules available for the Basic, Lite and runtime version.

DASYLab Extensions



Analysis Toolkit

The analysis toolkit contains a group of modules to analyse a signal in the frequency domain: Octave and third octave analysis, transfer functions, different kinds of filters as well as signal energy calculation.

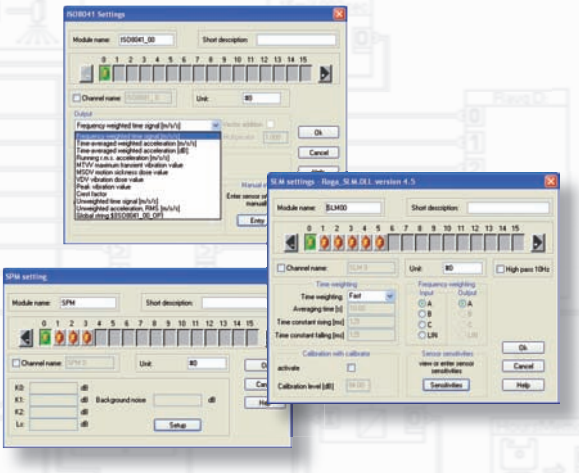


Sequence Generator

The Sequence generator module gives you the tools to easily create setpoint signals for control applications. Curves and ramps of different shapes can be combined to create custom waveforms.

Net Option

The network communication modules allow fast data and information transfer between different DASYLab applications via TCP/IP.



Vibration Impact on Human Body

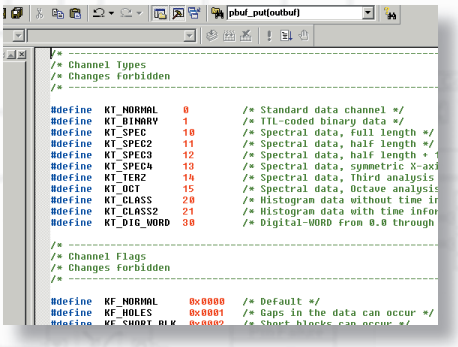
This extension contains the complete analysis and weighting for vibration impact on the human body generated by machines according to ISO 8041.

Acoustics

Sound level and sound power calculation according to the appropriate ISO norms are the central analysis modules of this extension.

Driver Toolkit

Have your own hardware? The driver toolkit allows you to include any kind of data source in DASYLab. It contains the complete API to develop your own drivers using Microsoft C.



```
/* Channel Types
/* Changes forbidden
/* ------------------------------------------------------------

#define  KT_NORMAL     0        /* Standard data channel */
#define  KT_BINARY     1        /* TTL-coded binary data */
#define  KT_SPEC       10       /* Spectral data, full length */
#define  KT_SPEC2      11       /* Spectral data, half length */
#define  KT_SPEC3      12       /* Spectral data, half length +
#define  KT_SPEC4      13       /* Spectral data, symmetric X-ax
#define  KT_TERZ       14       /* Spectral data, Third analysis
#define  KT_OCT        15       /* Spectral data, Octave analysis
#define  KT_CLASS      20       /* Histogram data without time in
#define  KT_CLASS2     21       /* Histogram data with time infor
#define  KT_DIG_WORD   30       /* Digital-WORD from 0.0 through

/* ------------------------------------------------------------
/* Channel Flags
/* Changes forbidden
/* ------------------------------------------------------------

#define  KF_NORMAL     0x0000   /* Default */
#define  KF_HOLES      0x0001   /* Gaps in the data can occur */
```

Extension Toolkit

Need a custom function that cannot be created in the Python™ Script module? Use the extension toolkit to add modules to DASYLab using Microsoft C. Use the working examples as the basis for your modules.

DASYLab Features

You can choose between four different DASYLab Versions to get exactly the features that you need. The light version contains the basic functions for PC-based data acquisition and representation. The basic version comes with additional mathematical and statistical functions as well as basic control modules. The full version comes with additional blocks for automation of measurement and analysis tasks. The professional version contains the network functionality, frequency and Rainflow analysis as well as a setpoint generator module. All versions also offer the opportunity to use Python Script based modules. The full and the Pro version also allows you to manage these modules, such as creating, editing, and exporting them.

Functional Group	Lite	Basic	Full	Pro
Trigger Functions				
Pre/Post Trigger	●	●	●	●
Start/Stop Trigger	○	●	●	●
Combi Trigger	○	●	●	●
Sample Trigger	○	●	●	●
Trigger on Demand	○	●	●	●
Relay	●	●	●	●
Mathematics				
Formula Module	○	●	●	●
Arithmetic	●	●	●	●
Comparator	●	●	●	●
Trigonometry	○	●	●	●
Scaling	●	●	●	●
Differentiation/Integration	○	●	●	●
Logical Operations	○	●	●	●
Bit Logic	○	●	●	●
FlipFlop	○	●	●	●
Gray Code	○	●	●	●
Slope Limitation	○	●	●	●
Reference Curve	○	●	●	●
Statistics				
Statistical Values	○	●	●	●
Position in Signal	○	●	●	●
Histogram	○	●	●	●
Rainflow	○	○	+	●
Two Channel Counting	○	○	+	●
Regression	○	●	●	●
Counter	○	●	●	●
PWM Analysis	○	●	●	●
Min/Max	○	●	●	●
Sort Channels	○	●	●	●
Check Reference Curve	○	●	●	●
Signal Analysis				
Filter	○	●	●	●
Correlation	○	●	●	●
Data Window	○	●	●	●
FFT	○	●	●	●
Polar/Cartesian	○	●	●	●
FFT Filter	○	○	+	●
FFT Maximum	○	○	+	●
n-Harmonic	○	○	+	●
Elektrical Characteristics	○	○	●	●

Functional Group	Lite	Basic	Full	Pro
Harmonic Distortion	○	○	●	●
Period Check	○	○	●	●
Third Analysis	○	○	+	●
Resample	○	●	●	●
Control				
Sequence Generator	○	○	✱	●
Generator	●	●	●	●
Switch	○	●	●	●
Slider	○	●	●	●
Coded Switch	○	●	●	●
PID Control	○	●	●	●
Two-Point Control	○	●	●	●
Time Delay	○	●	●	●
Latch	○	●	●	●
Signal Router	○	●	●	●
TTL Pulse Generator	○	●	●	●
Stop	○	●	●	●
Global Variable Read	●	●	●	●
Global Variable Set	●	●	●	●
Blocktime Info	●	●	●	●
Display				
Y/t Graph	●	●	●	●
X/Y Graph	○	●	●	●
Chart Recorder	●	●	●	●
Polar-Plot	○	●	●	●
Analog Meter	●	●	●	●
Digital Meter	●	●	●	●
Bar Graph	●	●	●	●
Status Lamp	●	●	●	●
Diagram	●	●	●	●
List Display	●	●	●	●
Files				
Read Data	●	●	●	●
Write Data	●	●	●	●
Backup Data	○	○	●	●
ODBC Input	○	○	●	●
ODBC Output	○	○	●	●
Data Reduction				
Average	●	●	●	●
Block Average /Peak Hold	●	●	●	●
Separate	○	●	●	●

Functional Group	Lite	Basic	Full	Pro
Merge/Expand	○	●	●	●
Shift Register	●	●	●	●
Cut Out	○	●	●	●
Time Slice	○	●	●	●
Circular Buffer	○	○	●	●
Network				
Net Input	○	○	🖧	●
Net Output	○	○	🖧	●
Message Input	○	○	🖧	●
Message Output	○	○	🖧	●
Data-Socket Import	○	●	●	●
Data-Socket Export	○	●	●	●
Special				
New Black Box	○	●	●	●
Black Box Export/Import	○	●	●	●
Action	○	○	●	●
Message	○	○	●	●
Send E-mail	○	○	●	●
Time Base	○	●	●	●
Signal Adaption	○	●	●	●
Run Python™Script Modules	●	●	●	●
Create Python™Script Modules	○	○	●	●
Add-on Modules				
Convolution	○	○	+	●
Weight	○	○	+	●
Transfer	○	○	+	●
Universal Filter	○	○	+	●
Save Universal File	○	○	+	●
ISO 8041 Module	○	○	✱	✱
Sound Level Meter	○	○	✱	✱
Sound Power Meter	○	○	✱	✱

Program Options	Lite	Basic	Full	Pro
Sequencer	○	○	●	●
Number on Layout pages	1	1	200	200

DASYLab Lite Version is restricted to 64 data channels

Legend	
Included in this version	●
Not included in this version	○
Available as part of **Analysis Toolkit Addon**	+
Available as individual **Add-on** module	✱
Only available in **Net version**	🖧

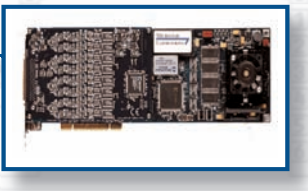
DASYLab 13 is compatible with Windows XP, Windows Vista, Windows 7 and Windows 8.
To check compatibility of the available hardware drivers please visit www.measx.com/dasylab or www.dasylab.com.

DASYLab Interfaces

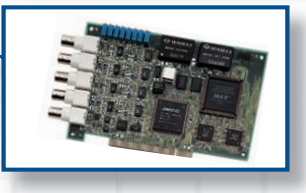
DASYLab supports a wide variety of different data acquisition devices using any kind of available interface to the PC. Whether you have stationary, mobile or in-vehicle application, DASYLab will support the appropriate sources.

Software Interfaces
Analog Input /Output
Analog Input /Output Multispeed
Digital Input / Output
Digital Input / Output Multispeed
Counter Input
Frequency Output
DataSocket Import
DataSocket Export
DDE
DDE Input / Output
RS232
RS232 Input / Output
ICom
ICom Input / Output (TCP/IP)
IEEE 488
ieee488 Input / Output
IVI
IVI Counter
IVI DCPower
IVI DMM
IVI Switch
IVI Scope
ModBus
Analog Input / Output
Digital Input / Output
XNet
National Instruments CAN Bus
National Instruments LIN Bus

DAP Microstar



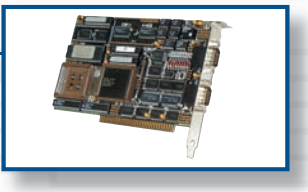
PCI / PCIe



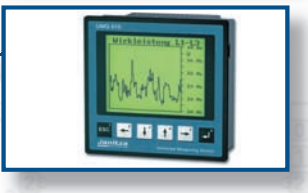
PXI/Compact-PCI

USB

CAN

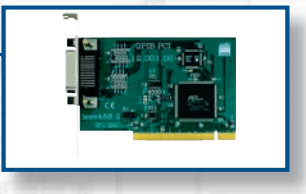


Ethernet

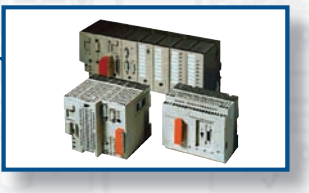


RS232

IEEE



SPS Simatic S7



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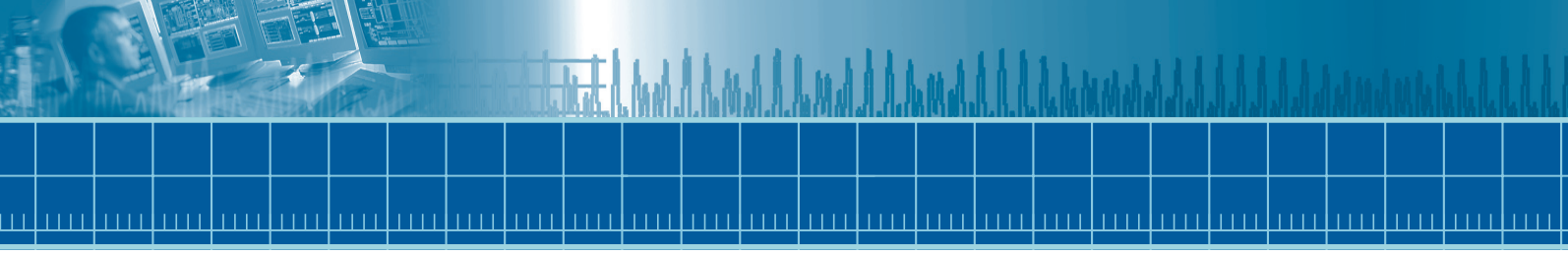

Distributor