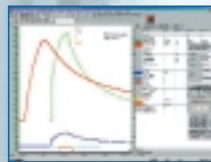


# Delphin Technology ...



*for every application a perfect solution ...*

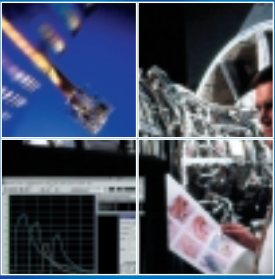


## Data Acquisition via Ethernet

Datalogger · Factory Data Acquisition  
Process Monitoring · Analysis · Control  
Vibration Monitoring · Diagnostic  
Remote Control



ISO 9001



# Trendsetter in Data Acquisition ...

## via Local Networks

### Overview

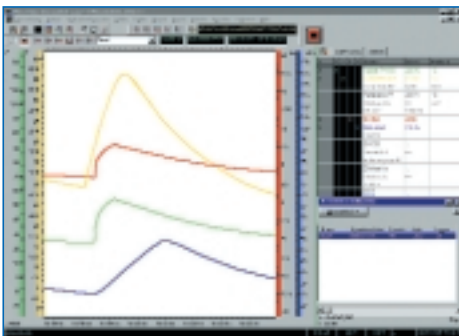
- TopMessage and TopLab are the most efficient devices in their class. They are suitable for both small and large channel numbers.
- No additional cable installation required –existing company networks can be used.
- No additional PCs required - existing networked PCs can be used.
- No additional signal conditioning required - TopMessage devices already have integrated signal conditioning.
- No additional potential isolators required - channels are already potentially isolated.
- Low space requirement - TopMessage devices are small and practical.
- Can be used independently from PCs - the devices possess high internal intelligence with virtual channels such as calculation channels, statistical channels etc.
- Process signals can be connected via detachable terminals.



**TopMessage,**  
for field applications



**TopLab**  
for laboratory applications



Analysis

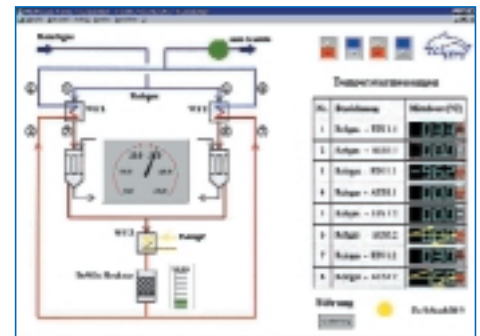
### MHouse Software

Can be installed on any PC within a network for analysis, visualization and monitoring. Data will therefore be available where it's really needed.

OPC Server

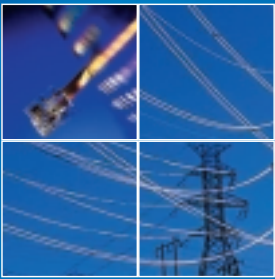
\*LabView™ Driver

Driver DLLs



Operation, Observation

\*LabView is a Trade Mark of National Instrument



# Delphin Technology ...

*outstanding,  
innovative products.*

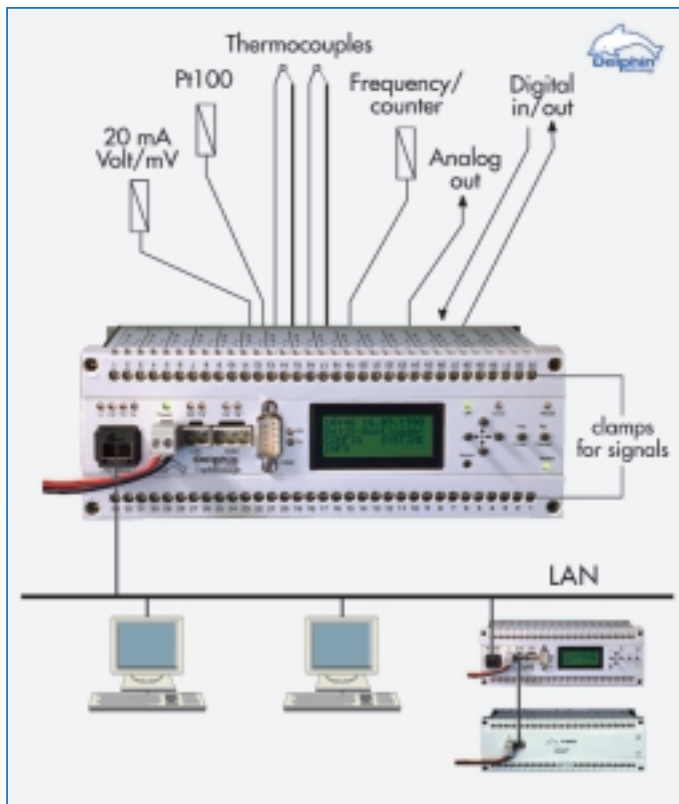
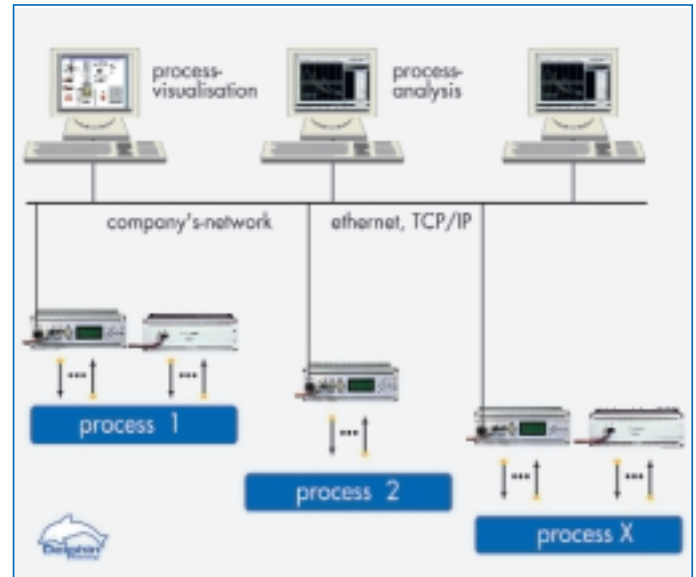
Customer enthusiasm is evident from the many varied applications of the devices: in the lab, for development and testing, for extensive monitoring of containers, machines and plants and for data acquisition...

It is now also possible to evaluate data and to operate and observe processes on your normal computer, no matter where the Message devices are located.

Message devices can work independently and are therefore not dependent upon crash vulnerable PCs and networks.

A 16 Megabyte data memory will retain data even in the event of a power-cut.

The majority of data is transferred offline via file transfer. Online transfers are required for operating and monitoring.



The Message devices are small and practical requiring very little space. It is possible to integrate them into existing networks, such as those for PCs.

They are easy to install. Connect your signals, configure the software and away you go.

Delphin devices offer a unique link between analogue and digital technology.

Through galvanic isolation you save on the need for amplifiers. This provides additional cost and space benefits. Dangerous earthing loops also no longer occur.

Their flexibility is unrivalled. Each analogue input can be individually seized with a RTD, thermocouple, Volt- or 20 mA-signal. This saves the need for expensive transformers, reducing costs and space requirements.

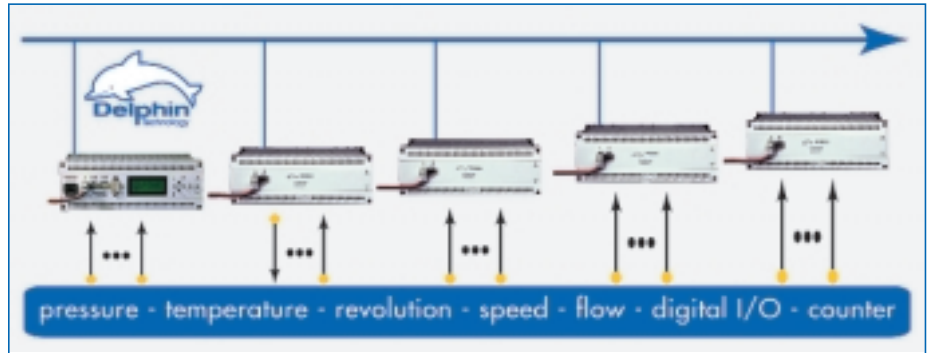
High measurement accuracy, with a 24 Bit resolution, also makes them suitable for any application



# TopMessage ...

*modular, practical, scaled*

Delphin engineers can help in word and deed in project engineering and will prepare individual and specific proposals. The benefits of modularity will be appreciated with early planning of your application.



Effective for both large and small channel numbers.

The TopMessage device (Master) can be equipped with 2 modules, each with 32 measurement and control channels.

The modules can be combined in any way. Up to 48 slaves with the same housing design, equipped with 2 modules each, can be connected to the Master device.

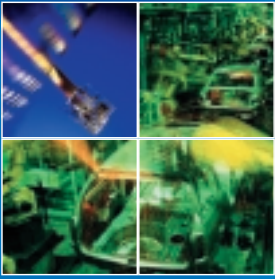
Data transmission between Master and Slaves is achieved via a CAN-Bus.

Module	Analog inputs	Analog outputs	Frequency, Status-inputs	Status inputs	Switching outputs	Sum sampling rate
<b>ADVT</b>	15 channels Volt/mV, 20mA, Thermocouples					<b>800 Hz</b>
<b>ADIT</b>	10 channels Volt/mV, 20mA, RTD, Thermocouples	1 channel 20 mA			1 channel	<b>800 Hz</b>
<b>ADGT</b>	8 channels Volt/mV, 20mA, RTD, Thermocouples					<b>60 Hz</b>
<b>AAST</b>	4 channels Volt/mV, 20mA, RTD, Thermocouples	4 channels 20 mA		2 channels	2 channels	<b>800 Hz</b>
<b>DIOT</b>			11 channels	1 channel	16 channels	
<b>IOIT</b>				24 channels	1 channel	
<b>OTPT</b>				1 channel	24 channels	
<b>AMDT</b>	8 channels Volt/mV, 20mA,	2 channels +/-10 V		4 channels	4 channels	<b>50 kHz</b>

The measurement values are scaled and stored in a linearized way (e. g. psi, gallons/sec, °F.....

Very high measurement accuracy; 24 Bit resolution; auto calibration.

The AMDT module, for transient signals and vibration analysis Made possible by mobile phone technology. All functions for the acquisition of frequency spectra and fast analogue signals (up to 50 kHz sum sampling rate) have been accommodated in the smallest space possible for 8 analogue inputs.



# MHouse Software ...

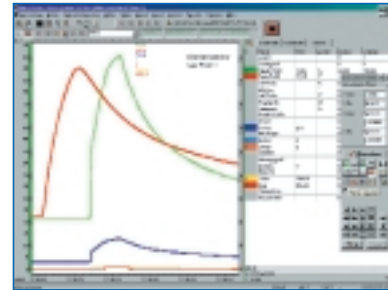
*modular, user friendly, efficient*

Delphin technology offers economical and high-quality standardized measurement data acquisition, process data acquisition and monitoring. Mhouse is the term stands for a series of software modules, which are selected for the actual application. The TCP/IP protocol permits the transmission via Intranet and Internet. (Additional information on MHouse is available in the Mhouse prospectus).

## BasicPackage Module

acquisition, observation, analysing, filing, monitoring and export of measurement data is adapted to the practical requirements. Systematical grouping of channels to measurement units. Online and offline observation. Smart software tools permit a comfortable evaluation. Value and time axes can be easily zoomed.

Special functions for laboratory and research applications. Control of data acquisition by events.



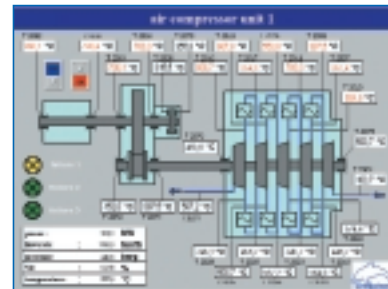
BasicPackage Module  
acquisition, observation, analysing, export.

## ProcessVisualisation Module

Operation, observation, monitoring .

The set up of process graphics is easy and fast.

It's not necessary to ask a specialist for help. There are results such as useful applications, even for tests and developments.

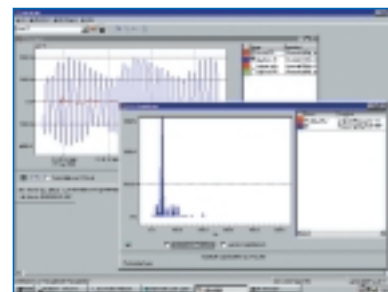


ProcessVisualisation Module  
Observation, operation

## FastLab Module

Analysing of fast time domain signals of AMDT module.

Sampling rates up to 50 kHz.



FastLab Module  
Analysing of fast time domain signals of the AMDT module.

## AlarmMaster Module

Organization of events and alarms. Defining of alarm groups and priorities. Analysing of alarms and event by mouse click. Forwarding of alarms by email, voice mail, fax, SMS to external employees.

## Further software modules:

### LabView Driver

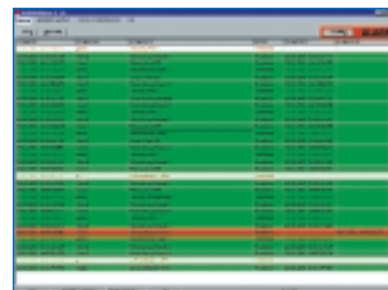
Linking of Delphins' TopMessage and TopLab devices efficiently to LabView.

### OPC-Server

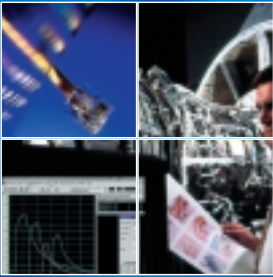
Linkage of your existing software with OPC (OLE for Process Control)

### Dynamic link library driver (DLL)

For software engineers and programmers



AlarmMaster Module  
Organisation of events and alarms.



# Virtual channels ...

## *efficiency for your application*

The Delphin products offer properties that help you to organize your applications especially efficient. Make use of the offered functions:

### High measuring rate through parallel conversion

Through parallel conversion, the device's design also permits high channel numbers with high measuring rates, enabling analysis of dynamic processes.

### Connection of measurement devices

Equipped with serial interfaces to connect scales, large-scale displays etc. via RS232, RS422 and RS485, protocol generator for ASCII protocols, and ModBus.

### Emailing with Message devices

Further progress in using existing data paths. Emails can include fault signal texts and measurement data. By clicking on the Email's file attachment, the required evaluation software will run, displaying measuring curves on the monitor. Emails can be sent independently with TopMessage devices.

### Remote data transmission

Remote control through direct connection to telephone, radio or GSM modems. In the event of faults, Message devices can automatically establish a telephone connection and transmit fault signals.

### PLC programming (IEC 1131-3)

Programming languages available: Instruction list (AWL), function plan, contact plan (KOP), structured text, (learned on very high-level languages). PLC programming is an independent product.

### Limit values

Limit values can be provided on all channels for alarm output and event control. Wire breakage monitoring has been integrated.

### Calculation channels

Permits mathematical linking of channels. This enables implementation of differential measurements, quotient measurements, and efficiency and performance measurements. A calculation channel can be stored and evaluated like a measurement channel, e.g. temperature difference calculations, torques, performances etc.

### Linearization channels

In addition to the permanently installed sensor linearizations, user defined sensor characteristics (up to 2000 value pairs) can also be loaded into the device.

### Control channels

Permit control processes - without having to program one line of code. Simply set the result of a calculation channel to a digital output, e.g. a switching output to be set if a temperature difference is exceeded.

### Average channels

Besides real measurement values of an analogue input, average values can also be calculated and used as a further channel. Time related averages, sliding average value, statistical functions.

### PID closed loop controller

Several CLCs can be provided simultaneously. Module AAST with four analogue inputs and four analogue outputs, permits the simultaneous operation of 4 CLCs. Automatic and real time setting of the standard parameters.

### Integrator channels, differentiator channels

Besides the measurement value of an analogue or status input, its value can also be integrated or differentiated via a time domain, and then used as further channel. Also includes operation hours counter, edge counter and summation functions.

### Reference value channels

Enables reference value curves to be produced which can then be used both internally and externally. External devices such as CLCs, can be controlled and processes observed at a PC with reference value curves.

### Timer channels

Possibility of producing selective edges and pulses at digital outputs. This provides a simple tool to control external devices in the form required.

- Pulse duration modulator
- Time-delay relay function
- Alarmclock functions related to time
- Pulse generator (free running or real time synchronous)





# Delphin's Vibration Technology ...

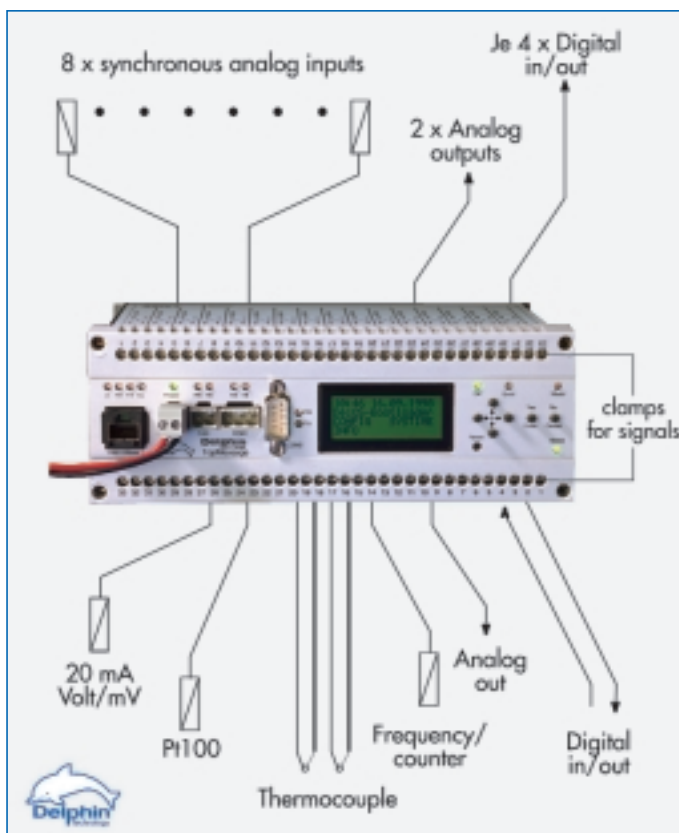
*exceptional, innovative*

## TopMessage Device

With the compact and modular TopMessage system, it is now possible to monitor machinery vibrations and process statistics, such as temperature and pressure, at the same time, within one system.

### The main keystones

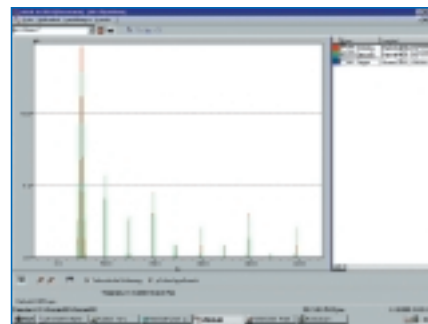
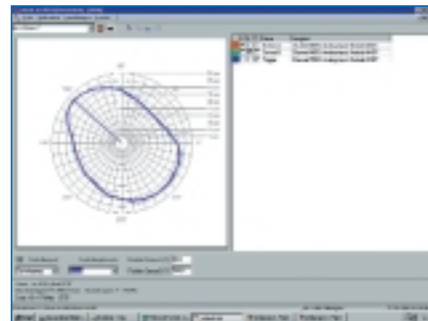
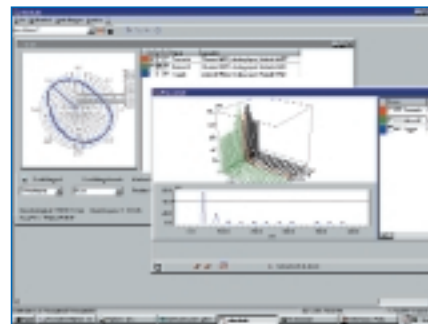
- Sensitive monitoring system via early reporting of any imminent damage
- Analysis and diagnosis of current state by simply logging onto the computer network
- Continuous quality control through long term data storage and automatic data transfer
- Event acquisition using facts and not guesswork through simple limit event detection
- Conditioned based maintenance supported through long term data storage and statistics



## MHouse Software - Module VibroLab

Analysis, monitoring, predictive maintenance.

Easy grouping in measurement units of vibration signals from various machine parts. Simple recall of a configuration to begin visualization and analysis. From current measurement value to historical data at the click of a mouse. Available are time domain signal diagram, FFT/spectrum diagram, orbit diagram, waterfall diagram.



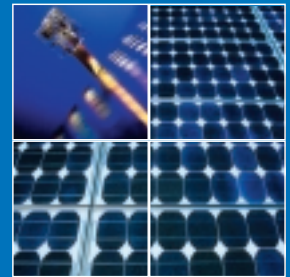
## I/O Module AMDT

DSP based I/O-module for transient signals and for online vibration analysis.

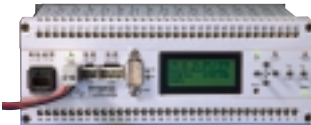
Every function for the acquisition of fast analogue signals and frequency spectra accommodated in the smallest space possible. 8 analogue inputs, parallel sampling with up to 25 kHz each 2 analogue outputs, 4 digital inputs, 4 digital outputs

# The Message Program ...

*individual and flexible*



## TopMessage



- DIN rail mounting, detachable terminal rows

## TopLab



- for laboratory applications

## for TopMessage and TopLab

- Ethernet connection, TCP/IP
- Serial interfaces
- Telephone/radio data transmission
- Modular, for small and great channel numbers

## MinMessage



- Data acquisition, monitoring, datalogger
- Serial interfaces
- DIN rail mounting, detachable terminal rows
- Telephone/radio data transmission
- 16 analog channels per device
- Analog inputs and digital in-/outputs



ISO 9001

Presented by

## The MHouse Software

different languages available

### Basic Package

Process analysis, acquire, evaluate, file, export, trends, characteristics

### Process Visualisation

Operating, observing and monitoring

### Remote Control

Gapless measurement data acquisition, monitoring, remote diagnosis, data transmission by telephone, radio, GSM modem, evaluation by means of the Basic Package

### AlarmMaster

Alarm/Event administration (local and remote call)

### FastLab

Analysis of dynamic measurements

### VibroLab

Vibration diagnostic, monitoring, predictive maintenance

### PLC Programming

Programming system for the PLC programming corresponding IEC1131-3, instruction list, contact plan, function plan, structured text

### ASCII-Logger

On-/Offline data to ASCII files

### LabView-Driver

For fast solutions

### OPC Server / Client

Connection of OEM programs to the Message products (hardware and software)

### Driver DLLs

Driver for self programmers

### Turnkey systems

completely provided by Delphin, many applications prove of our efficiency

