Sefram

Data Acquisition Solution

DAS1700

High Speed Data Acquisition Solution

The DAS1700 is a High Speed Data Acquisition Solution well suited for applications ranging from small sensor signal logging (process) to electrical power analysis.

With CAT III safety class, it feature versatile channel configurability, high speed sampling **(1 MSa/s)**, a wide input range (1mV to 1000V), **500GB internal SSD hard drive**.

The 1µs sampling interval in file mode lets you capture some transient events safely. In addition, its large built-in memory capacity allows for data recording for long periods.

Each channel can be easily configured in wide range of parameters to record different signals.

Features and benefits :

- Fast sampling rate: up to **1** MSa/s (1µs)
- Up to 72 channels (with multiplexed board)
- Modular device by changing acquisition boards
- 4 boards avalaibles: universal, multiplexed, strain gauge and high voltage VDC
- Measure up to 1000VAC with high voltage board and measure Pt100 and Pt1000 with multiplexes board
- 16 bit resolution with multiplexed board / 14 bit resolution with universal board
- 500GB SSD Internal memory
- 16 logic input channels with power supply (12V)
- Wide 15,6 inches touchcreen TFT display
- USB and LAN interfaces
- Battery option (up to 2 hours)
- Free software for control and analysis
- Carrying case include in standard

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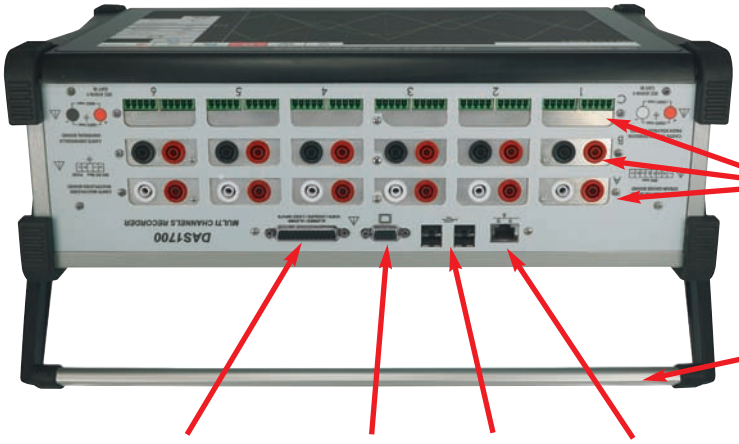
High Speed Data Acquisition Solution

Front panel

Carry handle / stand

15,6 inch touchscreen

Top panel



3 Boards slots
as standard
3 additional boards
with extension module

Carry handle / stand

Logical Inputs and alarms
With power supply
(12V)

VGA
output

USB
interface

Ethernet
interface

Back panel

CAN inputs when
option is available
(5-12V)

LIN inputs when
option is available

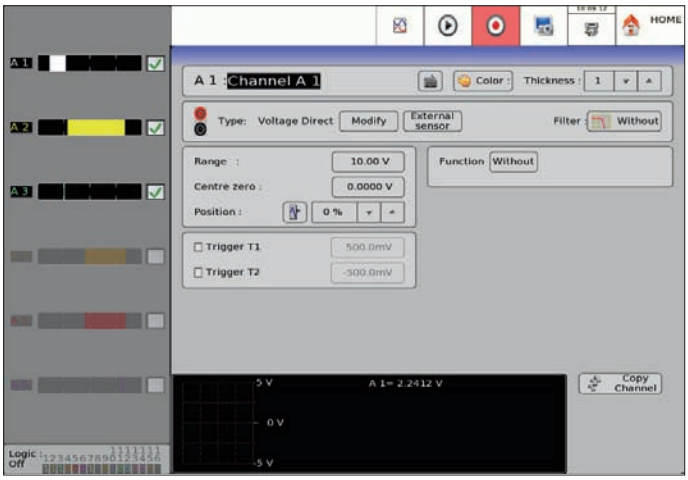
Power button
when battery option
is available

Power Supply /
ON / OFF Button

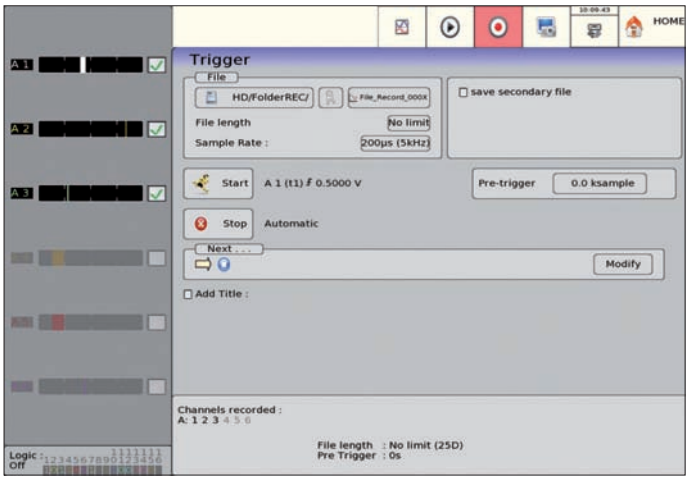
Earth terminal

High Speed Data Acquisition Solution

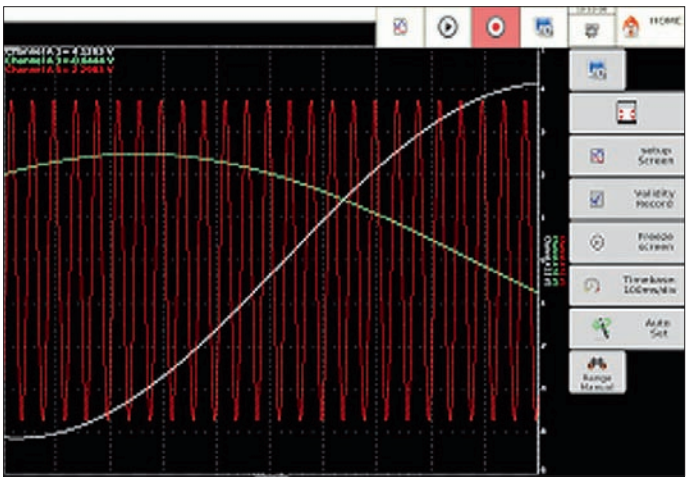
Operation highlights

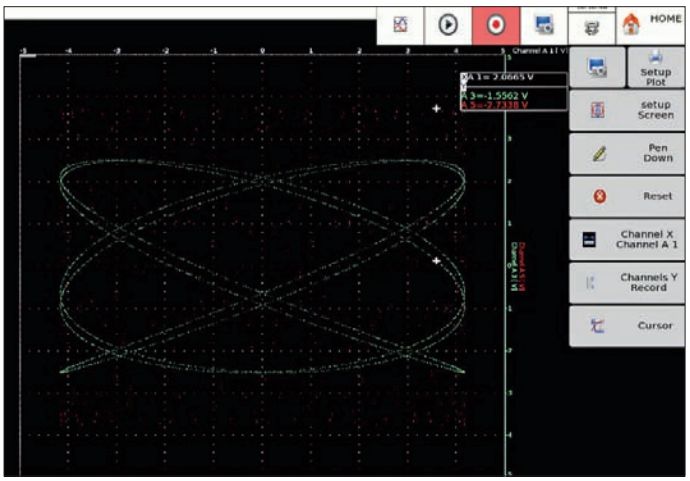


In the same page each channel can be easily and simply prepared to record. Parameters like the type of signal to be recorded (voltage, current, frequency, temperature, counter, PWM), set change unit (to convert a voltage to meters for example), the display range, shift the zero, add functions, choose the best layout for yours graphics and define the trigger positions are showed in the main page.



It is possible to set a trigger or combination of triggers to start and stop recording, for example, start your recording on a logical channel, after a delay, on an analogue channel with a threshold, on a combination of parameters.

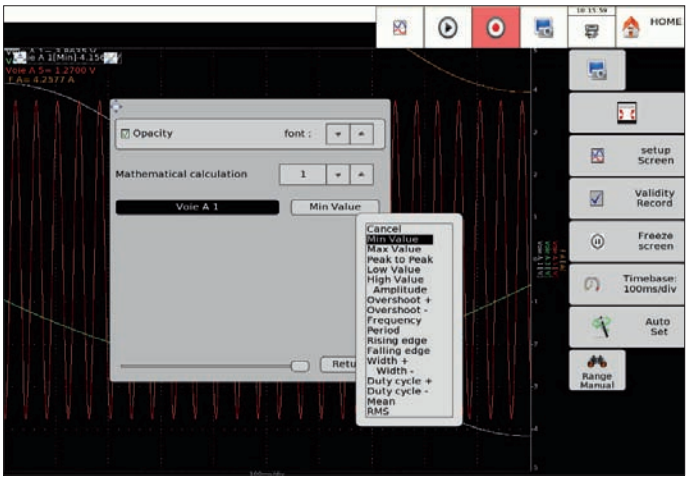




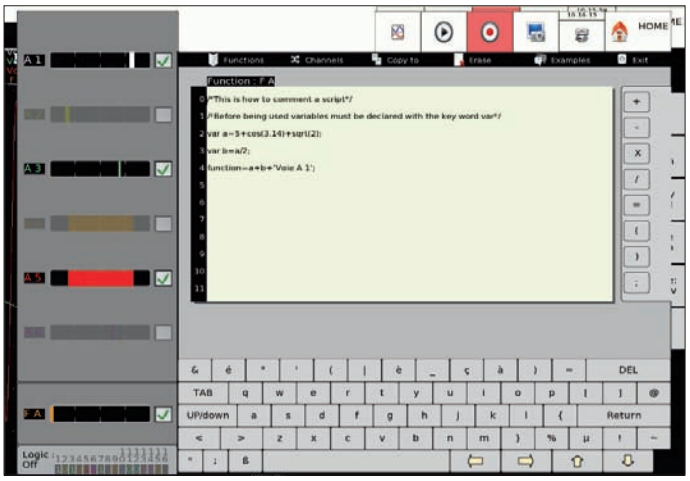
XY mode for plotting one varying signal versus another and F(t) mode like oscilloscope with 100 kHz bandwith

High Speed Data Acquisition Solution

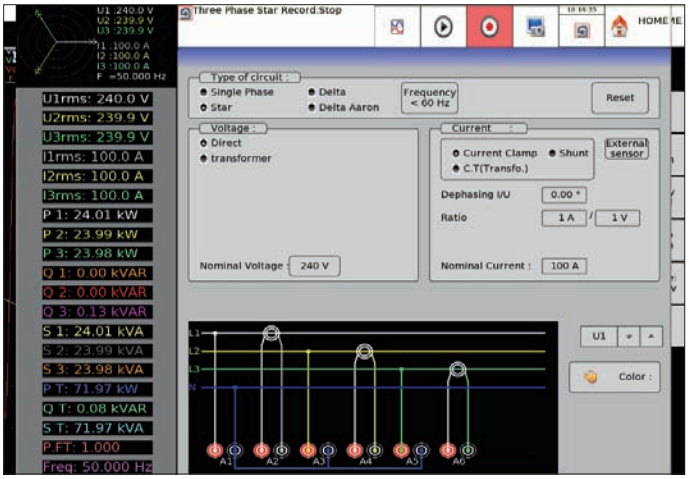
Operation highlights

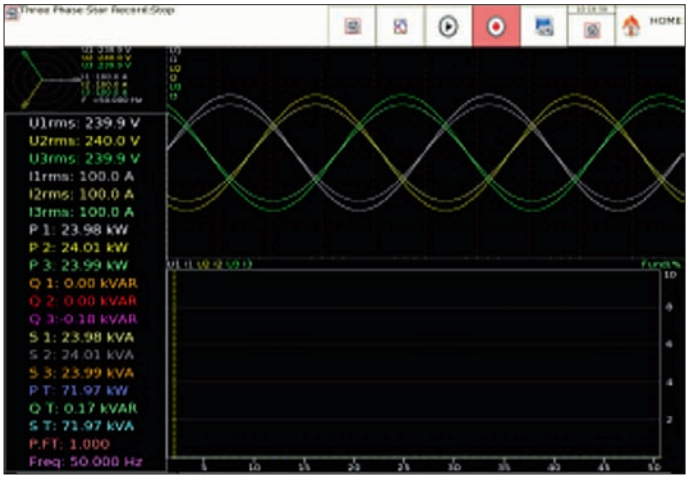


Benefit from up to 19 calculations on the recorded channels. View the values on your graphs



The power of the DAS1700 makes it possible to perform complex mathematical calculations between the channels. Use up to 24 channels functions. These channels are calculation channels and will not decrease the number of acquisition channels.
For even more complex calculations, a function editor in the script syntax language is available.





A powerful power analysis mode is available on the DAS1700. Analyze up to 4 power networks simultaneously. Easily configure your power analysis and define the type of network you want to analyze: single-phase, star three-phase or delta three-phase. Analyze networks up to 1000 Hz and use voltage or current transformers to analyze high voltage networks.
Once the setup is complete, access the measurement menu and view the voltages, currents, Fresnel diagram and display and measure up to 61 parameters (RMS voltage, power, current, energy, harmonics up to the 50th order,...). Also save this data in the internal memory of the device with a sampling rate up to 200µs.

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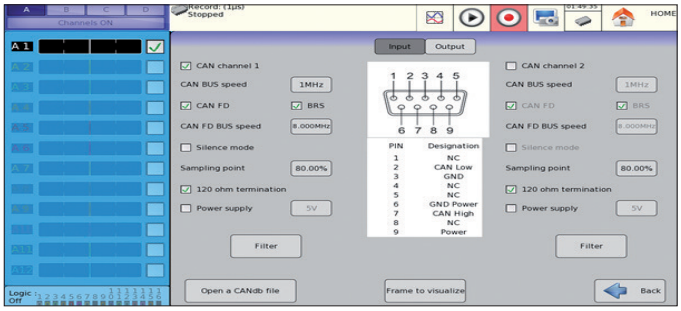
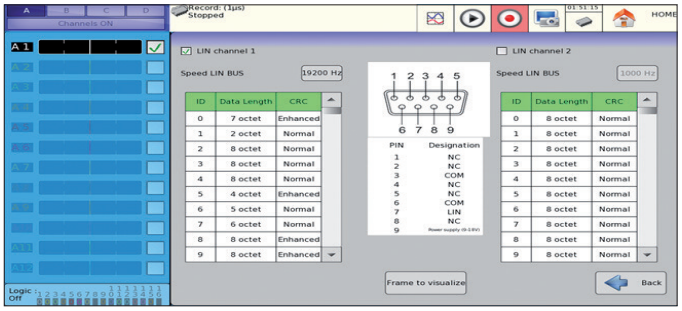
CAN/LIN Mode

With this new feature, you can analyze the following buses:

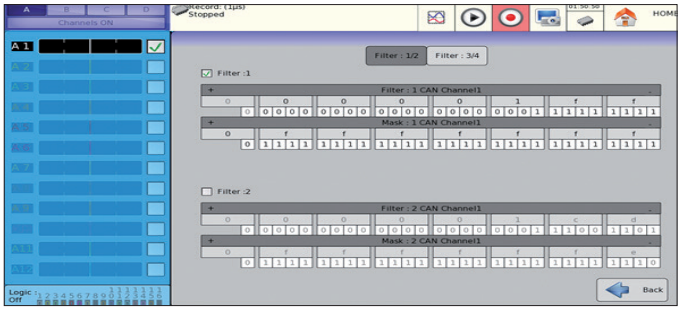
- CAN 2,0 A / B
- CAN FD
- LIN 1.3 / 2.X

2 isolated LIN input and 2 isolated CAN channels are provided on the rear panel of the DAS1700.
An external 5-12V supply is available for users.

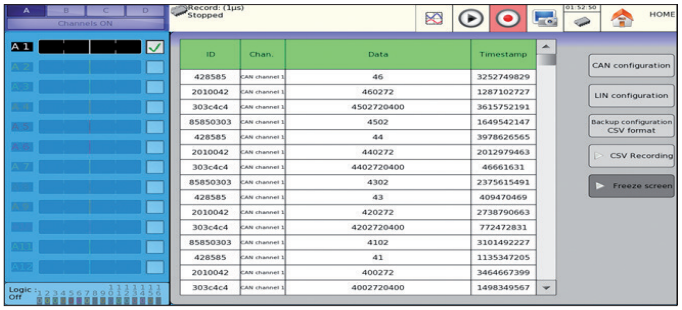




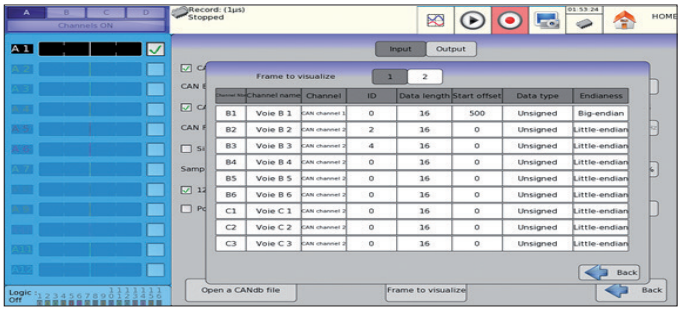
Easy and intuitive setup of all types of buses

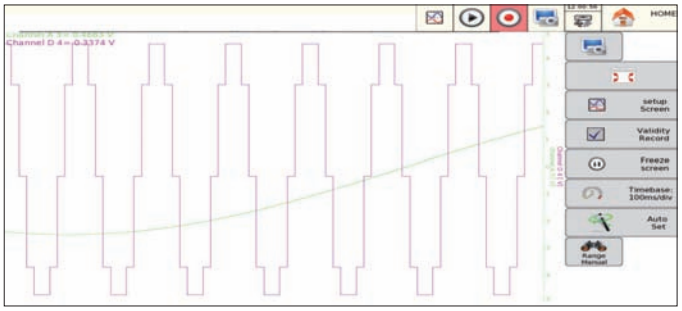


Hardware filtering of CAN frames

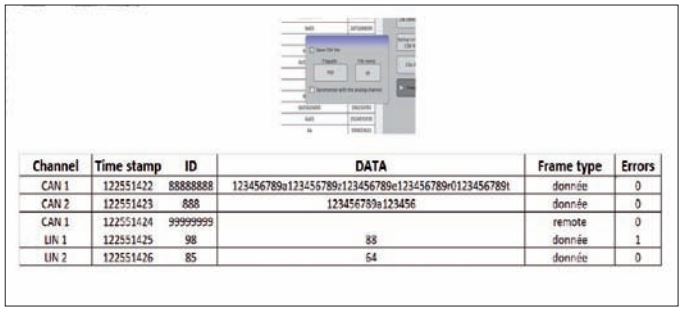


Display of complete frames of the selected bus



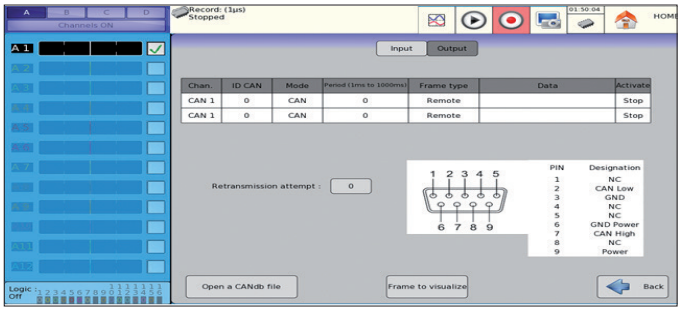


Graphical waveform conversion with analogue signal comparison



Channel	Time stamp	ID	DATA	Frame type	Errors
CAN 1	122551422	88888888	123456789a123456789z123456789e123456789r0123456789t	donnée	0
CAN 2	122551423	888	123456789a123456	donnée	0
CAN 1	122551424	99999999		remote	0
LIN 1	122551425	98	88	donnée	1
LIN 2	122551426	85	64	donnée	0

CAN frames recording in CSV format



Periodic frames output on the CAN bus

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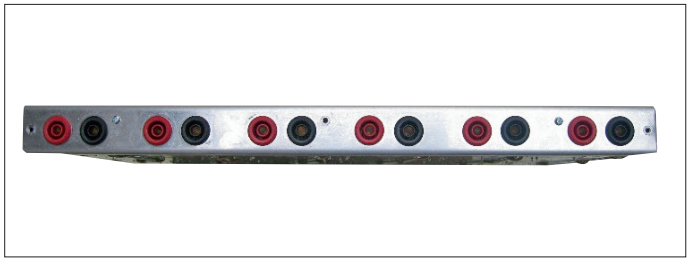
A modular device

The DAS1700 is a modular device. Indeed, different acquisition boards are available according to your needs.

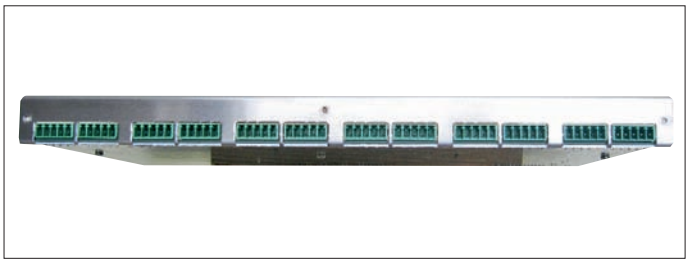
A versatile acquisition board: universal board



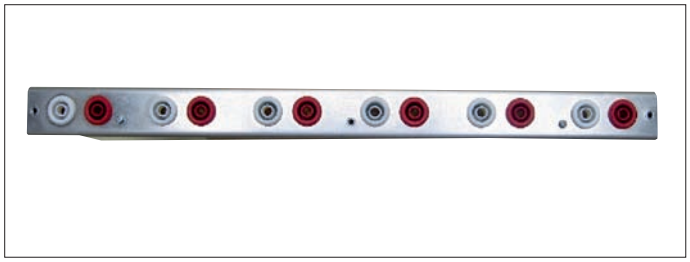
- 6 isolated channels
- Max voltage: ± 500VDC or 424 vrms
- Resolution: 14 bit
- Sampling: 1MSa/s max. (1µs)
- This board is compatible with voltage recording, current recording, frequency recording, RMS recording, thermocouple recording, counter mode and power analysis
- Safety: CAT III - 500V

An acquisition board for the process: multiplexed board

- 12 channels
- Max voltage: ± 50VDC
- Resolution: 16 bit
- Sampling: 5kSa/s max. (200µs)
- This board is compatible with voltage and current recording, thermocouple and Pt100 - Pt200 - Pt 500 - Pt1000 (2, 3, 4 wires).



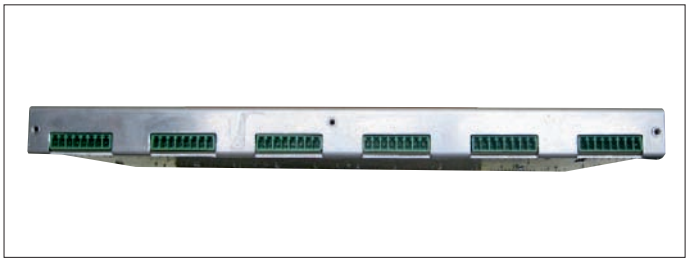
Acquisition board for high voltage: high voltage board



- 6 isolated channels
- Max voltage: ± 1000VDC or 1000VAC 50Hz
- Resolution: 14 bit
- Sampling: 1Msa/s max. (1µs)
- This board is compatible with frequency recording, RMS recording, counter mode and power analysis
- Safety: CAT III - 1000V and CAT IV - 600V

Dedicated acquisition board for deformation measurement: Strain gauge board

- 6 channels fully isolated
- Max voltage: ± 50VDC
- Resolution: 16 bit
- Sampling: 100 kSa/s max. (10µs)
- Strain gauge measurement (full bridge, half bridge)
- Bridge supply (2V and 5V)
- Low voltage and temperature (thermocouple) measurement
- Analogue and digital filters
- Pt100 and Pt1000 measurements

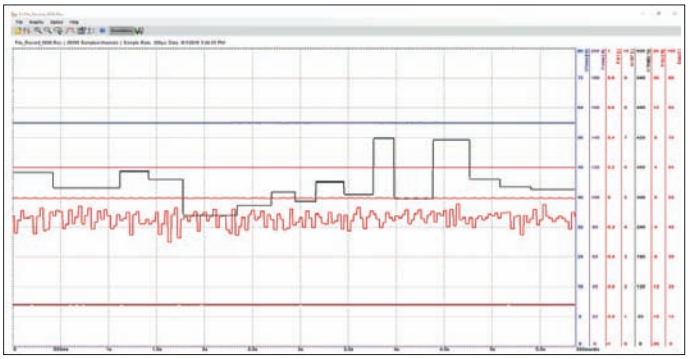


High Speed Data Acquisition Solution

A complete suite of software

Several software programs are available for free to remote control the device and analyze the recorded data.

Analyze the data recorded

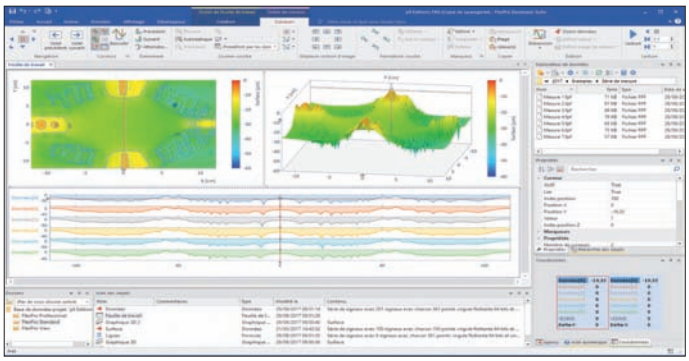


Sefram viewer

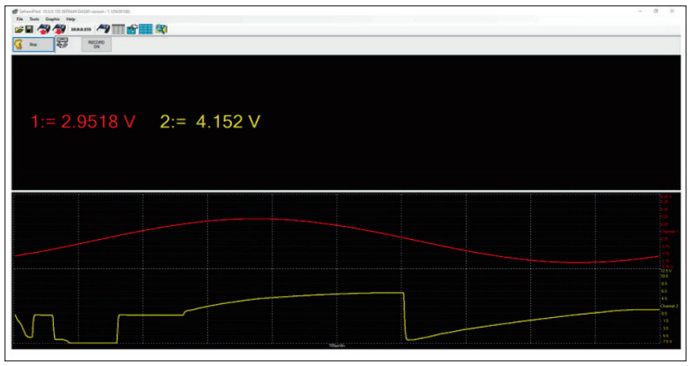
Use the free Sefram Viewer software to use and analyze all data stored on the device. Use the mathematical calculations available in the software to perform calculations after recording (y=ax+b, y=ln(x)+b, y=exp(cx)+b,...). With the software, also convert data saved in Excel© format or in text format for your personnal post analysis.

Flexpro (paid software)

Use the optional Flexpro software for powerful and advanced analysis of your recordings. Perform automatic analyzes, create test reports, use more than 100 functions of statistical and math analysis, display and visualize your data in 2D and 3D, convert your files into other formats, ...



Remote control your device



Pilot Sefram

Set up your device remotely with the free Pilot Sefram software. But that's not all ! Also, view in real-time the data recorded by the device, save the current setup of the device and download the recorded data via the built-in FTP browser.

VNC viewer

The recorder's built-in VNC provides a graphical desktop sharing system to remotely control the instrument from a computer with a full graphical interface that replicates the instrument's front panel using a mouse and keyboard.

High Speed Data Acquisition Solution

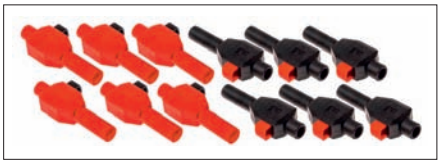
Included accessories

917007500 : Carrying case for DAS1700

917006010 : European Power Cord
917006020 : UK Power Cord
917006030 : US Power Cord

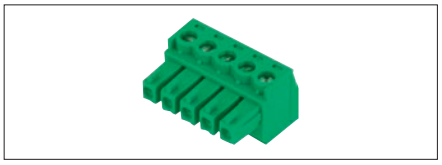
917006050 : Logical connector

Included accessories with universal board



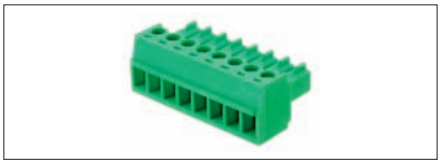
984401100: Accessories for universal board

Included accessories with multiplexed board



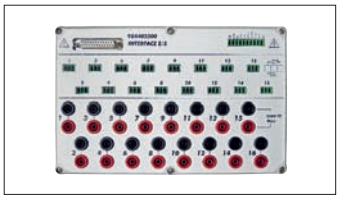
984402100 : Accessories for multiplexed board

Included accessories with strain gauge board



984402550 : Accessories for strain gauge board

Optional accessories

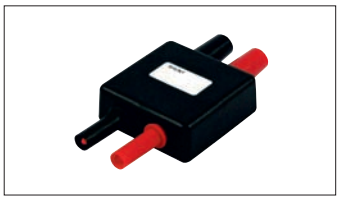


984405500 : 16 channel isolated logic adapter

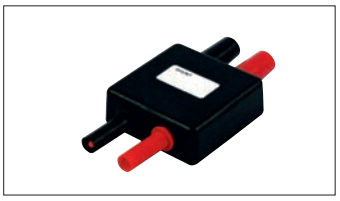
984405000 : Special cord for logical input

SO415 : Banana / BNC female adaptor

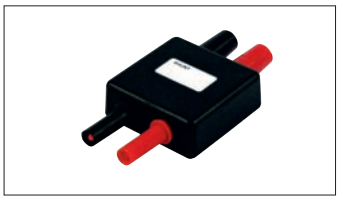
916004500 : WiFi option for DAS1700



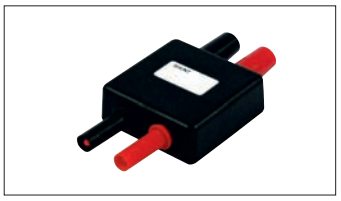
989007000 : 50 ohms shunt, 0.1%, 0.05A max



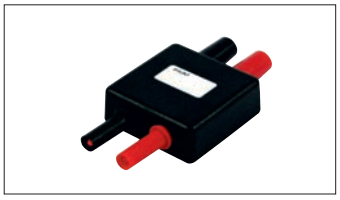
910007100 : 0.01 ohm shunt, 1%, 3A max



910007200 : 0.1 ohm shunt, 1%, 1A max



912008000 : 10 ohms shunt, 0.1%, 0.15A max

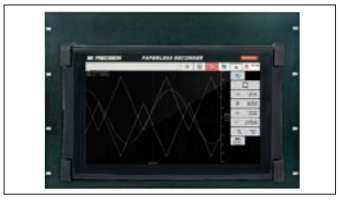


989006000 : 1 ohm shunt, 0.1%, 0.5A max

207030500 : 0.001 ohm shunt, 0.5%, 50A max

207030301 : 0.01 ohm shunt, 0.5%, 30A max

A1587 : Flexible Current Clamp 3000A AC



917004000 : Rackmount for DAS1700

High Speed Data Acquisition Solution

Nuclear and Hydroelectric production plant power

During maintenance period, the DAS1700 can record 16 parameters with his isolated analogue input (1000VDC max) and save with safety the records Inside the 500GB hard disk.

Aeronautic industry application

The DAS1700 is used to test the behavior of the rotor motors.
Thanks to his 1mV sensitivity, the records of pressure, vibration, RPM,temperature are done with an excellent accuracy.
The DAS1700 provides a complete test of physical and Electrical parameters which are integrated in the test report.

Automobile Industry

The DAS1700 includes CAN BUS analysis which is the great solution for automobile application test.
The user can combines CAN BUS signal analysis and physical parameters as well temperature.
The large display offers the ability to display all parameters in the same time for better analysis.

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Railway Industry application

For this application, the DAS1700 is fixed in the train with his rack mounted kit.
More than 16 channels are used to control and analyse the geometry of the track.
The DAS1700 can be connected to a printer for direct interpretation or the Sefram 8460 can be used with his thermal paper system fully integrated.
The records are saved in the hard disk and or transfer by Ethernet to a computer.

DAS1700

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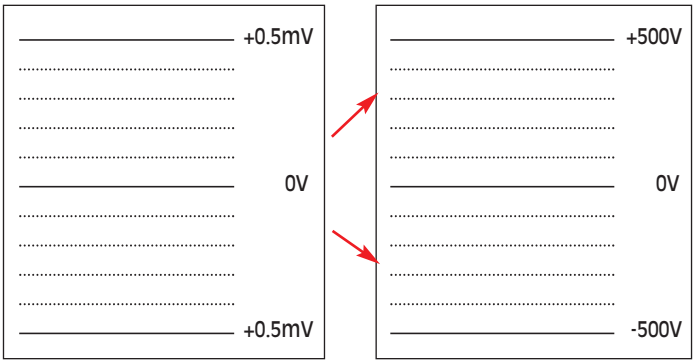
Specifications

GENERAL FEATURES
Capacitive backlight touch screen 15,6''
Screen resolution: 1366X768
Internal hard disk memory: 500 GB SSD (up to 2 TB with option)
Memory: 128 Mwords divisible by 128 blocks
Weight (with one board installed): 8 kg
Weight (with one added chassis): 10 kg
Dimensions (WxHxD): 271 x 472 x 154mm
Dimensions (WxHxD) (with added chassis): 271 x 472 x 236mm
Power Supply: 99 VAC to 264 VAC, 47 to 63 Hz
Consumption: 80 VA max
Operating temperature: 0 to 40°C (0 to 30°C with battery option or without fan
Storage temperature: -20 to 60°C
Interfaces: 4 USB, 1 VGA, 1 Ethernet

UNIVERSAL INPUT BOARD
VOLTAGE
Number of channels: 6 isolated channels
DC Voltage range: 1 mV to 1000 V
Maximum DC voltage: 500 V
Direct voltage accuracy: ± 0.1 % of range
Bandwith: 100 kHz (-3 dB)
AC RMS Voltage range: 200 mV to 500 V
Maximum AC RMS voltage: 424 V
RMS voltage accuracy: 1 % of range
Bandwith for RMS measurement: 5 Hz - 500 Hz
Crest factor: 2
Input impedance: 1 MΩ for ranges > 1 V / 25 MΩ for ranges < 1 V
High impendance input option: 10 MΩ for ranges > 1 V / 25 MΩ for ranges < 1V
Input capacitance: 150 pF
FREQUENCY
Sensitivity: 100 mV
Duty cycle: 10 %
Frequency range: 1 Hz to 100 kHz
Accuracy: 0.02 % of range
TEMPERATURE
Thermocouple type: J, K, T, S, B ,E ,N, C, L: -250 °C to 1760 °C
Cold junction compensation: ± 1.25 °C
SAMPLING
Vertical resolution: 14 bits
Maximum direct voltage sampling rate: 1 MSa/s (1 µs) each channel
Maximum RMS sampling rate: 5 kSa/s (200µs) each channel
Analogue filters: 100 Hz, 1 kHz, 10 kHz
Digital filters setting: < 100 Hz
SAFETY
Safety: CAT III - 500 V

Example with 1 mV and 1000V range



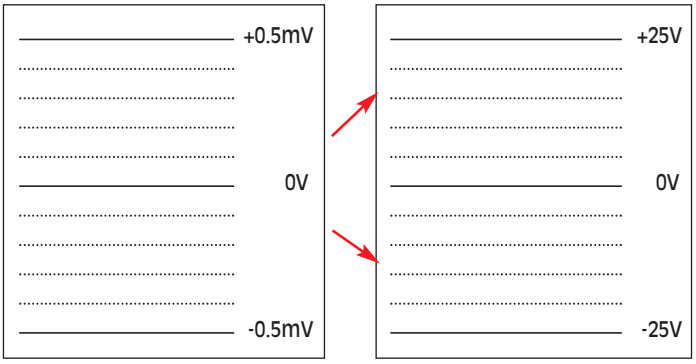
DAS1700

High Speed Data Acquisition Solution

Specifications

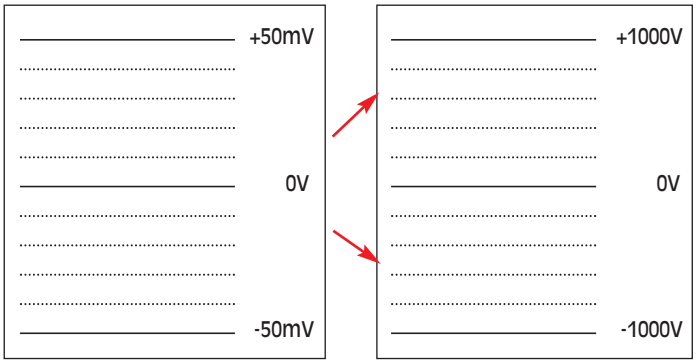
STRAIN GAUGE BOARD
VOLTAGE
Number of channels: 6 isolated channels
DC Voltage range: 1mV to 50V
Maximum DC Voltage: 50V
Voltage accuracy: ± 0.2% of range
Bandwith: 18 kHz (-3dB)
Excitation gauge bridge voltage: ± 1 V and ± 2,5 V
Input impedance: 2 MΩ for ranges < 1 V / 1 MΩ for ranges ≥ 1 V
STRAIN GAUGE
Unity: µSTR
Gauge bridge type: full bridge, half bridge
Automatic zero setup: up to ± 25000 µSTR
Ranges: 1000 µSTR to 50 000 µSTR (1000 µSTR, 2000 µSTR, 5000 µSTR, 10 000 µSTR etc..)
Accuracy: ± 0.1% of range ± 5 µSTR + 0.1% of offset
TEMPERATURE
Thermocouple type : J, K, T, S, B ,E ,N, C, L: -250°C to 1760°C
Pt100 / Pt1000 (2 and 4 wires): -200°C to 850°C
Cold junction compensation: ± 1.25 °C
SAMPLING
Vertical resolution: 16 bits
Maximum sampling rate: 100 kSa/s (10 µs) each channel
Analogue filters : 100 Hz, 1 kHz
Digital filters setting : < 100 Hz

Example with 1 mV and 50V range



HIGH VOLTAGE INPUT BOARD
VOLTAGE
Number of channels: 6 isolated channels
DC Voltage range: 100mV to 2000V
Maximum DC Voltage: 1000V DC
Direct voltage accuracy: ± 0.2% of range ± 0.2% of offset
AC RMS Voltage: 100mV to 1000V RMS
Maximum AC Voltage: 1000V AC RMS
RMS voltage accuracy: 1% of range
Bandwith: 26 kHz
Bandwith for RMS measurement: 5Hz - 500 Hz
Crest factor: 2,2
Input impedance: 11 MΩ for ranges < 10 V / 25 MΩ for ranges ≥ 1 V
Input capacitance: 150 pF
FREQUENCY
Sensitivity: 300 mV
Duty cycle: 10%
Frequency range: 10 to 100 kHz
Accuracy: 0.2% of range
SAMPLING
Vertical resolution: 14 bits
Maximum direct voltage sampling rate: 1 MSa/s (1 µs) each channel
Maximum RMS sampling rate: 5 kSa/s (200µs) each channel
Analogue filters: 100 Hz, 1 kHz, 10 kHz
Digital filters setting : < 100 Hz
SAFETY
Safety: CAT III - 1000V and CAT IV - 600 V

Example with 100 mV and 2000V range



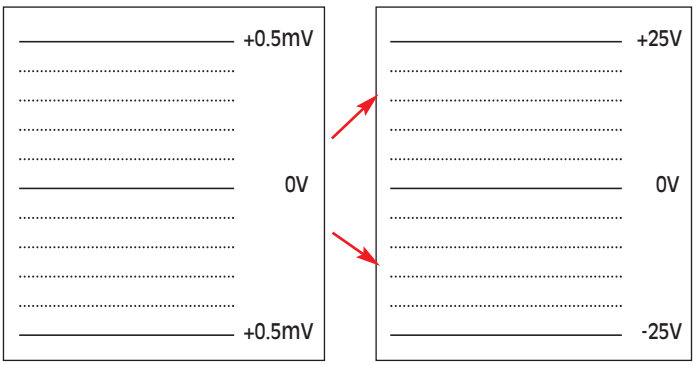
DAS1700

High Speed Data Acquisition Solution

Specifications

MULTIPLEXED INPUT BOARD
VOLTAGE
Number of channels: 12 channels
DC Voltage range: 1 mV to 50 V
Maximum DC Voltage: 50V DC
Voltage accuracy: ± 0.1 % of range ± 0.1 µV + 0.1 % of offset
Input impedance: 1 MΩ for ranges > 2 V / 10 MΩ for ranges < 2 V
Input capacitance: 150 pF
TEMPERATURE
Thermocouple type: J, K, T, S, B ,E ,N, C, L: -250°C to 1760°C
Pt100 / Pt200 / Pt500 / Pt1000 (2, 3 and 4 wires): -200 °C to 850 °C
Cold junction compensation: ± 1.25 °C
SAMPLING
Vertical resolution: 16 bits
Maximum direct voltage sampling rate: 5 kSa/s (200 µs) each channel
Digital filters setting: < 100 Hz

Example with 1 mV and 50V range



POWER ANALYSIS FUNCTION

(this function can be used with one universal board and accessories for current measurements)

Networks: single phase, three-phase
Frequency: 50-60Hz, 400Hz and 1000Hz
Display: oscilloscope, Fresnel diagram
Harmonics: calculated up to rank 50, with recording capabilities
Measurements: U and I (mean values, RMS, peak), crest factor, power (active, reactive, apparent), power factor, harmonics, THD, DF, frequency, energy

High Speed Data Acquisition Solution

Ordering Informations

Easily order the combination you need

DAS1700/ ____ ____ ____

Number of Multiplexed board*

Number of Universal board*

Number of High Voltage board*

*The sum of boards must be at most 3. If you need more than 3 boards, extension option is required

Board references

984402000: Multiplexed board - 12 multiplexed channel
984401000: Universal board - 6 universal channel up to 500V
984402500: Strain gauge board - 6 strain gauge channel
916006000: High voltage board - 6 high voltage channel up to 1000V

Factory options

917001000: Extension option - required for use of 4 to 6 channel boards simultaneous
917003000: Battery option - with up to 2 hours of autonomy*
917005000: IRIG option - internal clock synchronisation with an IRIG time
917005500: CAN / LIN Bus option
917002000: SENT option
917009000: Without fan option for specific environments
917007000: 2TB memory extension
917005600: GPS option - internal clock synchronisation with an GPS time
984402300: High Impedance input option for universal board (10MΩ).

* not possible with extension option

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For assistance and ordering