DATA ACQUISITION SOLUTION
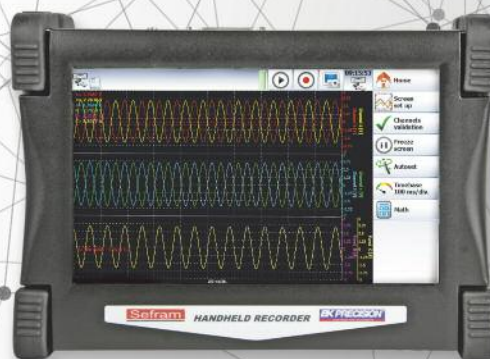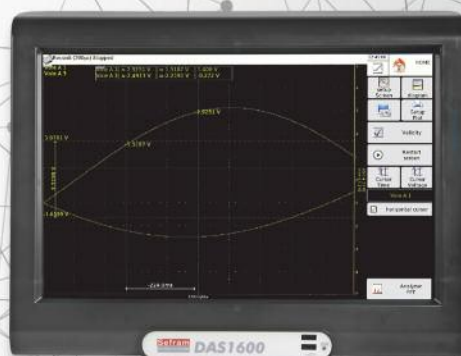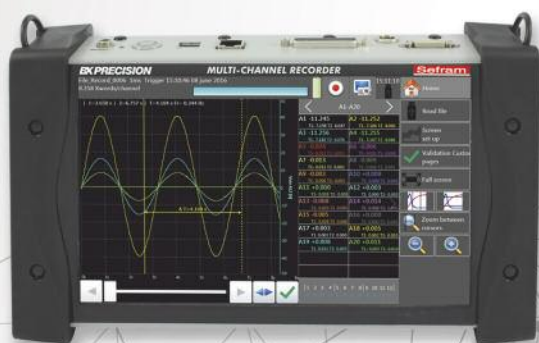
Product guide

The best technology distilled to give unbeatable performance and support

DAS240

DAS1600

8460

DAS800

DAS801

DAS1600

DAS30

DAS50

DAS60

Each SEFRAM Data Acquisition Solution is designed and manufactured in Saint-Etienne/France

BK PRECISION
ELECTRONIC TEST INSTRUMENTS

Sefram

Sefram Data acquisition solutions : a very long history !

With this new catalog and for the first time ever, Sefram is launching its new range of recorders which are fully equipped with touch-sensitive screens.

This product is not on offer anywhere else in the world.

This innovation is the result of more than 70 years of research which has seen recorders arriving at this level of technical perfection and simplicity of use.

We are convinced that the new DAS240 series will meet your needs for process applications. These recorders have been designed to measure and record up to 200 analogue channels. The DAS240 can be battery operated (ordering P/N DAS240BAT) and is equipped with a bright and panoramic touch screen. For the industrial maintenance and servicing, the DAS30/50/60 family will fulfill your needs for voltage, current, frequency measurement and record.

For recording specialists, the paper-free ranges DAS800, DAS801, DAS1600, offer you not only more effective recordings but also data entry and processing technology as well as an interface which make the devices interconnective.

For all measurement campaigns which require paper printing, the 8460 series is available with a paper width of 270mm and a printing speed of up to 200mm/s.

For each application, we have developed adapted measurement boards:

- A board with 6 universal channels which has become Sefram's best-seller. It allows the recording of voltages, currents, frequencies and temperatures.
  Completely isolated and CAT III – 600V.
- A new universal high-voltage board with 6 channels which allows live measurement up to 2000 VDC. Completely isolated and CAT III – 1000V
- An isolated 6 channel strain-gauge board for all your physical measurements
- A board with 12 multiplexed channels to meet all your control and process requirements

By combining 2 universal boards, your recorders can be transformed into energy analyzers with multiple-network energy analysis up to 1000 Hz.

The entire team at Sefram is at your disposal for any questions you may have.

We appreciate your business and all the confidence you have placed in us.

Sefram

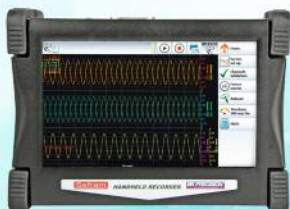# Selection guide
 Recorders

Data acquisition solutions from 2 to 200 channels

■ **DAS220**
Process recorder
10 channels

■ **DAS240**
Process recorder
20 to 200 channels

■ **DAS60**
6 channels
handheld
recorder

■ **DAS50**
4 channels
handheld
recorder

■ **DAS30**
2 channels
handheld
recorder

■ **DAS801**
Bench recorder
12 multiplexed
channels

■ **DAS800**
Bench recorder
6 universal
channels

■ **DAS1600**
Bench recorder
6 to 72 channels

■ **Sefram 8460**
Thermal recorder
6 to 36 channels

2 YEAR WARRANTY

Maximum number
of channels

2 4 6 10 12 36 72 200

BKPRECISION

Sefram 3

DAS220 / DAS220BAT: 10 channel handheld
Data acquisition solution 10 analogue channels

The new DAS220 and DAS220BAT (with internal battery) are dedicated to process applications with touch screen technology.

Like other SEFRAM recorders, we have included our know-how in the data acquisition and data processing applied to instruments. We have designed a very user-friendly interface and a new software named DasLab. With 10 analogue channels, the new DAS220 and DAS220BAT will meet all your requirements.

Capabilities

- 10 analogue channels
- Input: voltage, thermocouple, Pt100-1000, current (with optional adapter), resistance
- Voltage: from 1mV to 200V (±100V)
- Temperature: thermocouples (all types), Pt100-1000 (2 or 3 wires)
- 16 Bit vertical resolution
- Max sampling rate: 1ms (1kHz)
- 12 logical channels
- 4 logical function input with counter & frequency meter capability
- 4 alarms (output)
- 10" TFT panoramic touch screen
- Internal hard drive: 32 GB
- Interfaces: USB, Ethernet, WiFi (option)
- Lithium-ion battery (factory option): 15h autonomy
- DasLab software (license free)
- Safety: IEC61010 CAT I 100V
- NI LabViewTM driver available on www.sefram.fr

10 analogue channels board

You can measure and record:
- DC voltage
- DC current (with optional shunt)
- Temperature with thermocouples (all types)
- Temperature with Pt100-1000 sensors
- Resistance
- Pulse counter
- Frequency meter
- PWM measurement
- 0-10V and 4-20mA sensors

P/N: 902408000

A robust carrying case

With the optional carrying case, you can transport and use your DAS200 in all field applications.
With the DAS220BAT, you have 15 hours autonomy.

Cable with male bananas to simplify the connection to your application.
P/N: 802408000

Sefram *To select the right Data acquisition solution for your needs Please visit our website: www.sefram.fr*

DAS240 / DAS240BAT: Multi channel handheld
Data acquisition solution 20 to 200 analogue channels

The **DAS240 and DAS240BAT (with internal battery)** are dedicated to process applications with touch screen technology. Like other SEFRAM recorders, we have included our know-how in the data acquisition and data processing applied to instruments. We have designed a very user-friendly interface and a new software named DasLab. From 20 to 200 analogue channels, the new DAS240 and DAS240BAT will meet all your requirements.

Capabilities

- 20 to 200 analogue channels
- Input: voltage, thermocouple, Pt100-1000, current (with optional adapter), resistance
- Voltage: from 1mV to 200V (±100V)
- Temperature: thermocouples (all types), Pt100-1000 (2 or 3 wires)
- 16 Bit vertical resolution
- Max sampling rate: 1ms (1kHz)
- 12 logical channels
- 4 logical function input with counter & frequency meter capability
- 4 alarms (output)
- 10" TFT panoramic touch screen
- Internal hard drive: 32 GB
- Interfaces: USB, Ethernet, WiFi (option)
- Lithium-ion battery (factory option): 15h autonomy
- DasLab software (license free)
- Safety: IEC61010 CAT I 100V
- NI LabView™ driver available on www.sefram.fr

*factory optionnal
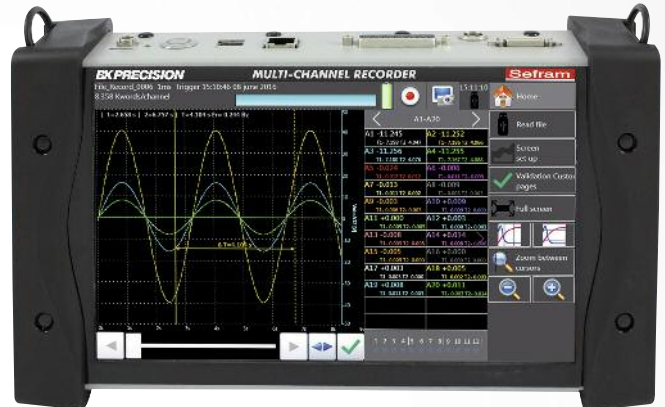
Supplied with one 20 channels board.

You can measure and record:
- DC voltage
- DC current (with optional shunt)
- Temperature with thermocouples (all types)
- Temperature with Pt100-1000 sensors
- Resistance
- Pulse counter
- Frequency meter
- PWM measurement
- 0-10V and 4-20mA sensors

20 analogue channels board **P/N: 902401000**

A flexible solution with the optional 20 channels modules

Your applications needs more measurement channels? The DAS240 is a flexible and scalable system!
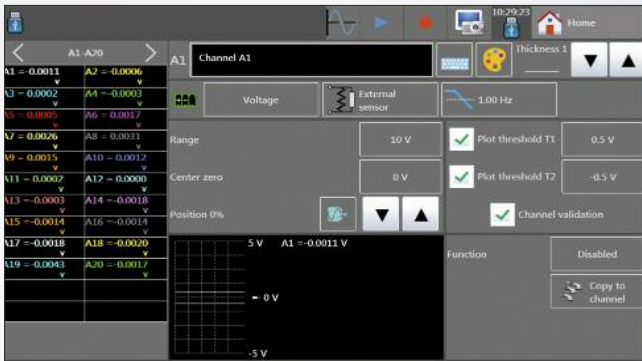Supplied with 20 measurement channels, you can add up to 180 channels, by increment of 20, for reaching a total of 200 channels. 20 channels modules (P/N: 902401000) are all versatile: you can measure voltage, temperature with thermocouples, Pt100-1000 and are supplied with fast connectors and a mechanical system to fix them together.

DAS240 with 40 measurement channels.

Connector with screws (easy to connect)

DAS240 / DAS240BAT: Multi channel Data acquisition solution 20 to 200 analogue channels
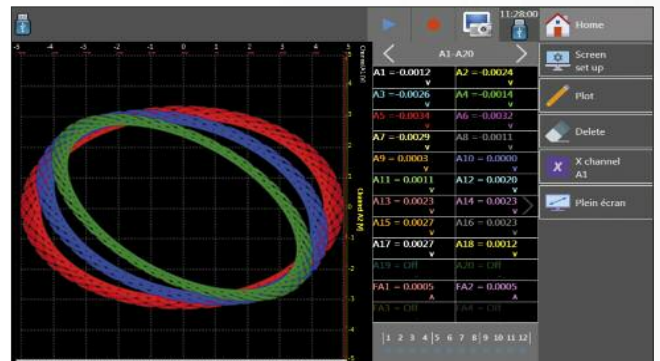
Easy-to-use interface with the panoramic touch screen

Setup: self-explanatory icons to guide the user.

Channels setup: all parameters can be displayed on a single screen.
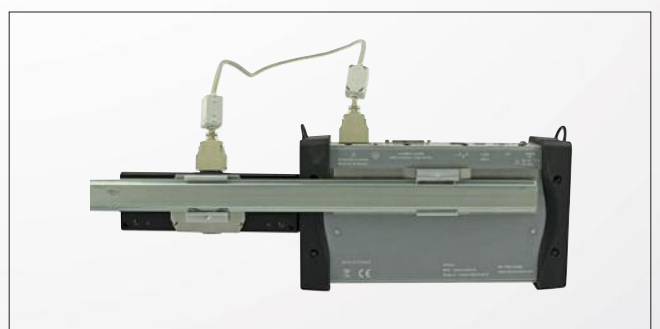

Numerical display of measurements.

XY mode.
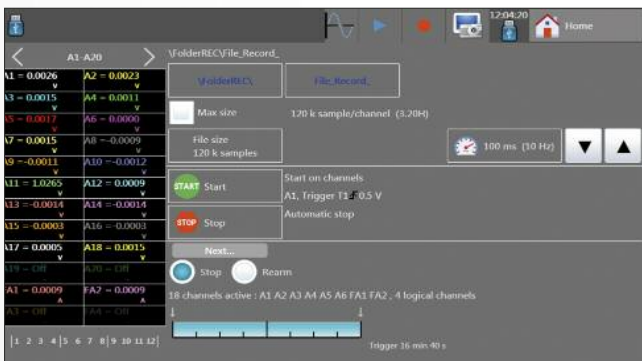
Trigger: multiple choice and combination of threshold, channels and conditions.

Math calculation between channels.

With the rackmount option, you can easily mount your recorder in a test system.
P/N: 902409000

DIN rail mount kit for DAS240 (60 channels max.)
P/N: 90403000

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DAS240 / DAS240BAT: Multi channel handheld Data acquisition solution 20 to 200 analogue channels
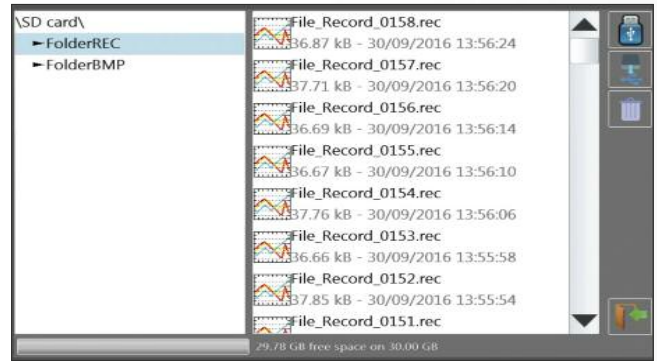
■ Digital interfaces:

The **DAS240 / DAS240BAT** are supplied with two USB Host interface and one LAN (Ethernet) interface.

■ With the 10 inch panoramic touch screen, you can easily perform the signal analysis

Recorded data can be displayed with zoom and cursors.

File management with the DAS240.

■ A complete set of accessories and options

902403000	DIN rail mount kit
902409000	19'' rackmount kit
902401000	20 channels module
902408000	Rugged carrying case
902402000	WiFi option (dongle)
984405500	16 isolated logical channels
902407000	Logical channels patch cord
902406500	4-20mA / 50 ohms shunt

■ A rugged and waterproof carrying case to protect your instrument (optional)

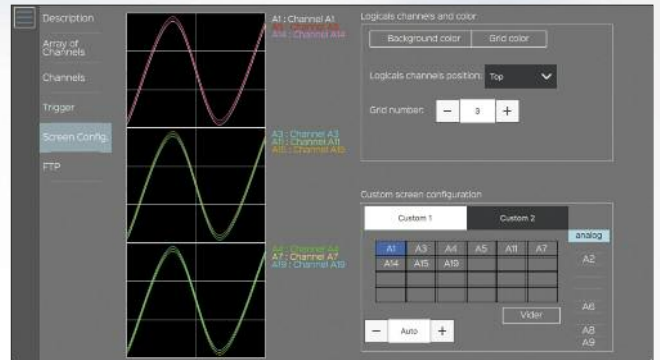*Check for accessories on page 11*

DAS240 / DAS240BAT: Multi channel handheld
Data acquisition solution 20 to 200 analogue channel
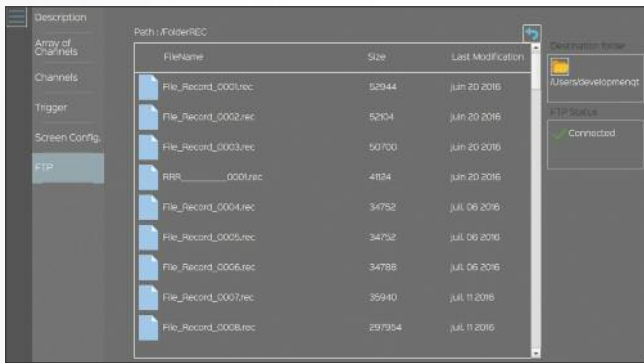
◼ SEFRAM DasLab Software

The new DasLab software for PC (under Windows) is suitable for:
- Managing recorder setup (online & offline)
- Remote setup of the DAS240
- Managing & downloading files (records, setup) from the recorder.

DasLab is a licence free software and can be downloaded from Sefram website.
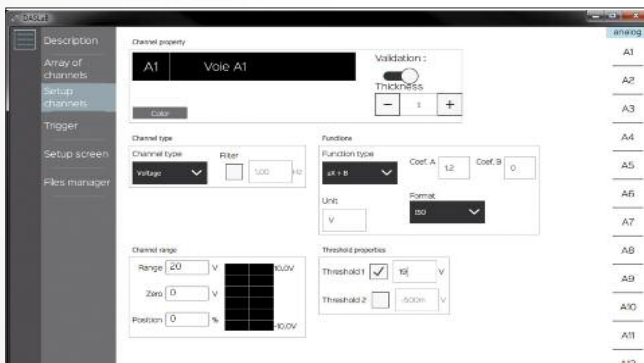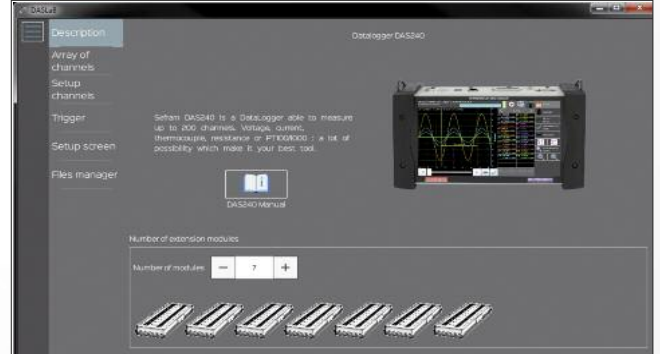Setup through the Ethernet interface or the WiFi interface (option).

DasLab: remote setup.

DasLab: FTP mode, file management.

DasLab: channels setup.

DasLab: Setup of all parameters on a single screen.

DasLab: automatic selection of the channels to be set up.

WiFi communication with the optional WiFi dongle (P/N 902402000)
The VNC application allows you to control all functions of your DAS240.

Real vnc™ is trade a mark

DAS30/50/60

Multifunction handheld Data acquisition solution, 2 to 6 analogue channels, dedicated to maintenance.

■ Handheld solution for all your data acquisitions


2 YEAR WARRANTY
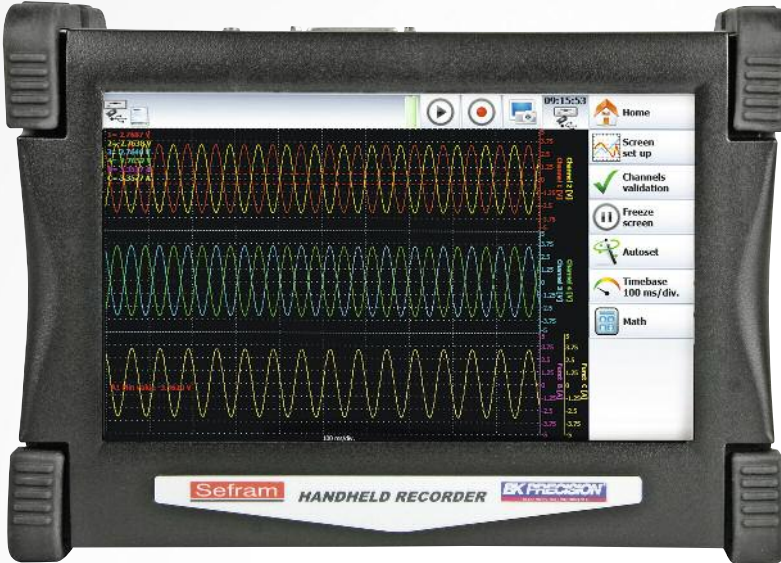
NEW

Capabilities

- 2 to 6 analogue isolated channels
- Universal input
- DC, RMS AC+DC voltage
- Frequency, thermocouples
- Pt100/Pt1000: option for DAS30/50 and included for DAS60
- 16 logical channels and 2 alarms output
- 14 Bit resolution
- 10 inch LCD coloured touch screen
- Sampling: 1Ms / channel
- Internal 32GB disk (DAS30/50) and 64GB (DAS60)
- Math functions
- Battery operation with 9h30 min autonomy
- Interfaces: 2 x USB, Ethernet
- Power analysis function
- 110mm thermal printer (factory option)
- CEI1010 CAT III 600 V
- 19" rack option
- Go-No Go Mode
- Automatic measurements

■ User-friendly interface

The DAS30/50/60 are equipped with a 10" touch screen: the user interface become absolutely interactive.
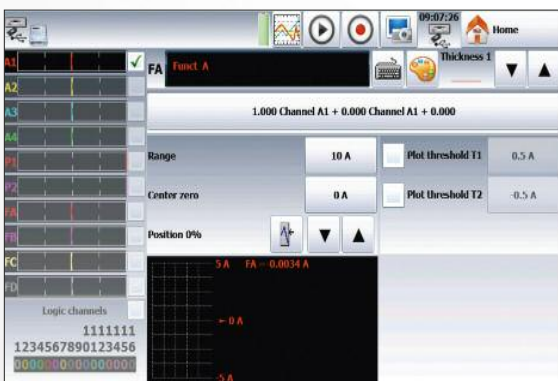
■ A rugged carrying case

The DAS 30/50/60 recorders are delivered in a rugged waterproof carrying case: the ideal solution to protect your recorder from dust and water and to carry all accessories.
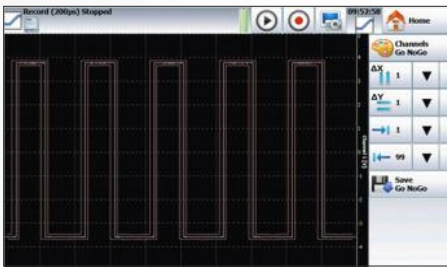
DAS30/50/60

■ 110mm thermal printer module

The DAS30/50/60 recorders can be equipped with the compact 110mm thermal printer module (factory option). With this module, you can print very accurately all your acquisitions on thermal paper.
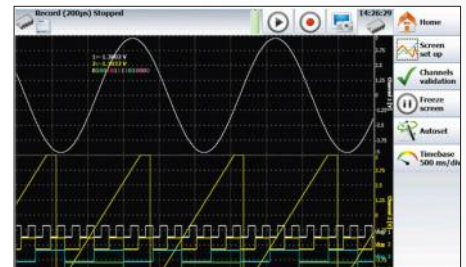

■ Flexible records to match your needs

Go-No-Go mode: dedicated for tests on production lines. It is possible to view and record out-off tolerance signals.
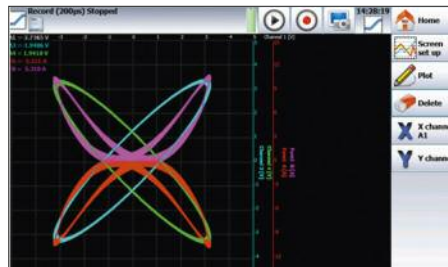
XY mode: your recorder will be a good replacement for your analogue graph plotter. Hardcopy is possible with optional printer.

With the panoramic 10'' LCD screen, it is very convenient and comfortable to view and analyse your signals and records.
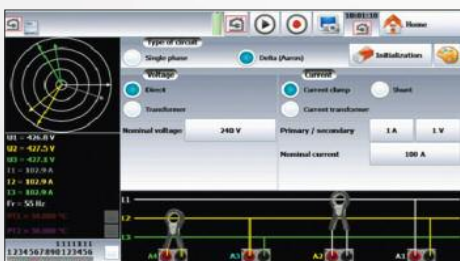
■ Power analysis function

The power analysis function provides all necessary measurements to analyse a single or a three phase network. We provide as options several current sensors that have preset parameters in the recorders.
The following parameters are calculated and displayed:

- Fresnel diagram
- Harmonics up to rank 50
- Real time oscilloscope
- Active, reactive, apparent power with power factor and DF
- Current, voltage (RMS, mean and peak values), frequency

■ Interfaces

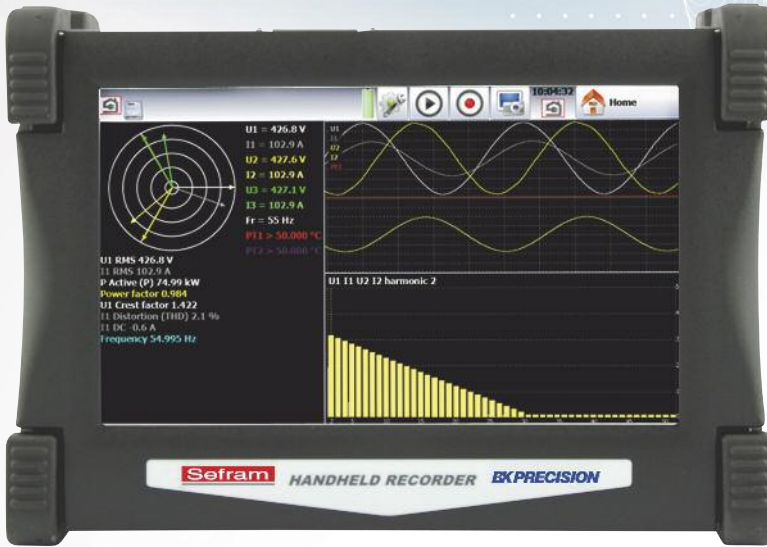The DAS30/50/60 recorders are equipped with 2 USB interfaces and 1 Ethernet interface.

Rackmount solution for use in test equipment.

Sefram *To select the right Data acquisition solution for your needs Please visit our website: www.sefram.fr*
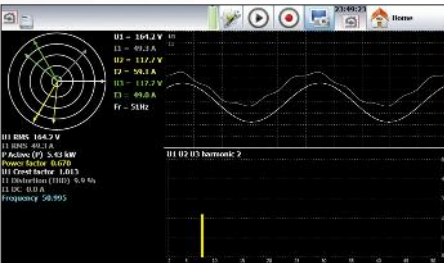
DAS60

6 analogue isolated channels
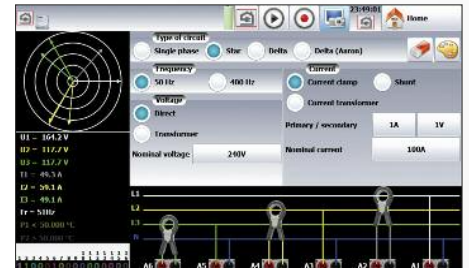2 Pt100 input and 16 logical channels.

DAS60: 6 channels Data acquisition solution with complete network analysis up to 400Hz

Graph display and harmonics analysis up to rank 50.

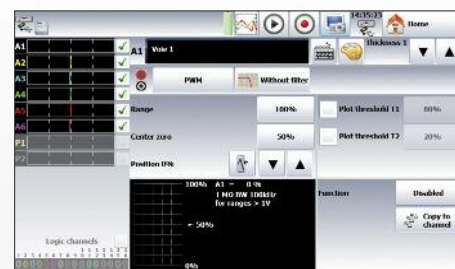Specific menu to define triggers on selected parameters.

Setup menu with schematics to show how to connect the clamps.

Remote control of your Data Acquisition Solution

PWM measurements

Select your WiFi network to remote control your recorder. You can access to all menus and transfer the records (files).


Measurement on PWM signals is included. Application: motors.

Sefram Viewer and Pilot Sefram comes free* with each Data acquisition solution.

◼ Sefram Viewer

This license free software is supplied* with each recorder. It allows the visualization of the recordings and the data transfer to other applications. SEFRAM Viewer makes the acquired signal analysis easier.

* free download from Sefram website.
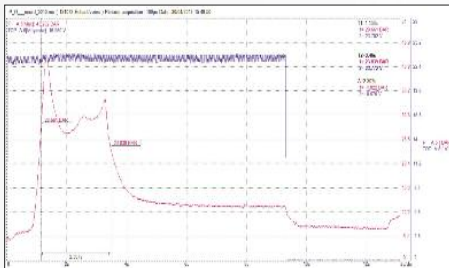
Capabilities

- Curve printing
- Value display
- Cursors and zoom
- File concatenation
- 8 math calculations
- Up to 120 character annotations
- Bitmap, Excel®, txt, csv exportation
- Configuration of the display

◼ Pilot Sefram

This license free software is supplied with each recorder*. It allows the setup and the remote control of Sefram recorders through Ethernet.

* free download from Sefram website.
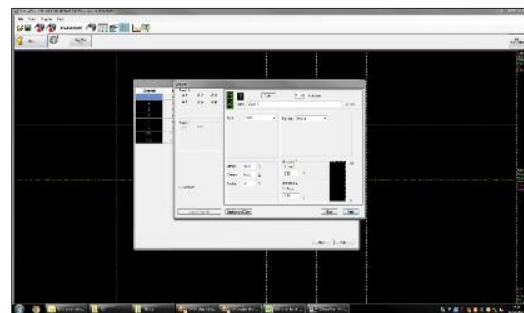
◼ Optional accessories for Data acquisition solution

Current clamps

SP 201 - Current clamp (200 AAC, 10mV/1A, ø15mm)
SP 221 - Current clamp (10 AAC, 100mV/1A, ø15mm)
SP 230 - Current clamp (1200 AAC, 10mV/1A, ø50mm)
SP 261 - Current clamp (1200 AAC+DC, 1mV/1A, ø70mm)
SP 270 - Current clamp (2000 AAC, 1mV/1A, ø70mm)
A1257 - Flexible current clamp (30A/300A/3000A) three-phase
**A1287** - Flexible current clamp (30A/300A/3000A) single-phase

Shunts

910007100 - 0,01Ω, 1%, 10A max, safety banana plugs
910007200 - 0,01Ω, 1%, 3A max, safety banana plugs
989006000 - 1Ω, 0.5%, 0,5A max, safety banana plugs
912008000 - 10Ω, 0,1%, 0,1A max, safety banana plugs

989007000 - 50Ω, 0,5%, 0.5A max, safety banana plugs
902406500 - 50Ω, 0,1% for DAS240
207030301 - 0,01Ω, 0,5%, 30A max, leads and cable lug
207030500 - 0,01Ω, 0,5%, 50A max, leads and cable lug

Logical channels accessories

984405000 - Patch cord for logical channels
984405500 - 16 channels isolated interface
902407000 - Patch cord for logical channels (DAS240)

DAS800 / DAS800SV
Paperless tactile Data acquisition solution, 6 universal isolated channels

The DAS 800 and the DAS 800 SV (without fan) are equipped with a 15,4 inches colour touch screen. They allow you to visualize your recordings comfortably and easily. Including a 500 GB hard disk, 6 universal analogue channels and both USB and Ethernet interfaces, the DAS 800 combines autonomy, power and simplicity.
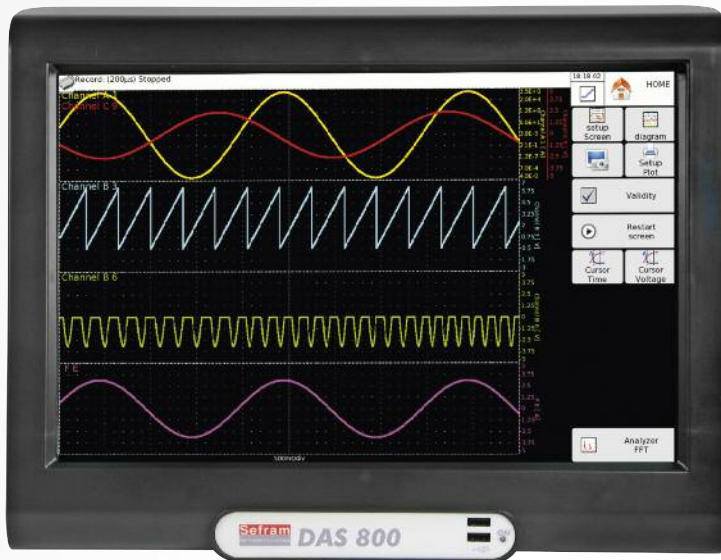
Capabilities

- 6 analogue channels
- Universal inputs
- DC, AC+DC RMS voltage measurement
- Frequency, Thermocouple, Pt100
- 14 Bit resolution
- 16 logical channels
- 15,4 inch TFT color touch screen
- 1 Mega sample/s sampling rate
- 128 Mword memory
- 500 GB internal hard disk
- Interfaces: 6 X USB, Ethernet, XGA
- Power analysis function: 50Hz, 60Hz 400 Hz, 1 kHz
- Battery option (except DAS 800SV)
- WiFi option
- 19'' rackmount kit (option)
- Go-No-Go mode
- IEC 1010 CAT III 600 V

Intuitive man-machine interface:

All of the setup, visualization and analysis functions are logically and conveniently presented.


Acquisition communication and processing:

The DAS 800 and the DAS 800 SV directly communicate with your computer thanks to the Virtual Network Computing software. You will be able to set up your recorder via Ethernet or WiFi connection. You can also forecast the trigger and receive an e-mail when the acquisition is complete.

DAS801 / DAS801SV
Paperless tactile Data acquisition solution, 12 multiplexed channels

The DAS 801 and the DAS 801 SV (without fan) are equipped with a 15.4 inches colour touch screen. They allow you to visualize your recordings comfortably and easily. Including a 500 GB hard disk, 12 multiplexed analogue channels and both USB and Ethernet interfaces, the DAS 801 combines autonomy, power and simplicity.
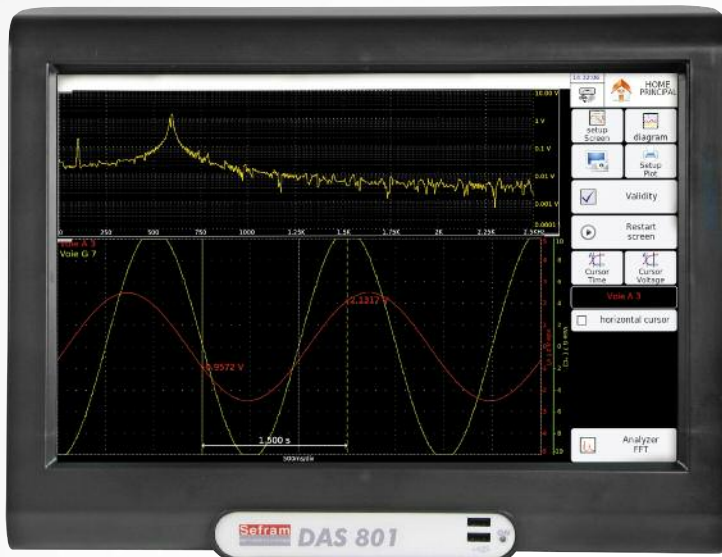

Capabilities

- 12 analogue multiplexed channels
- Voltage: DC RMS AC+DC from 200 mV to 50 V
- Temperature: Pt100 (2,3,4 wire) and thermocouples
- 16 Bits resolution
- 16 logical channels
- 15,4 inch TFT color touch screen
- Sampling rate: 5 kHz
- 128 Mword memory
- 500 GB internal hard disk
- Interface: 6 X USB, Ethernet, XGA
- WiFi option
- Rack option
- Battery option (except DAS 801SV)
- Go-No Go mode
- Automatic measurements

Intuitive man machine interface

All of the setup, visualization and analysis functions are logically and conveniently presented.
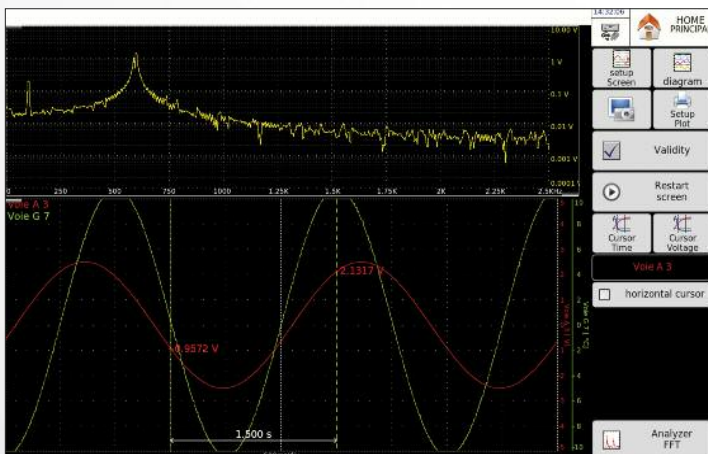

Acquisition communication and processing:

The DAS 801 and the DAS 801 SV directly communicate with your computer thanks to the Virtual Network Computing software. You will be able to set up your recorder via Ethernet or WiFi connection. You can also forecast the trigger and receive an e-mail when the acquisition is complete.

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DAS1600 / DAS1600SV
Paperless Data acquisition solution with 72 analogue channels!

The DAS1600 is the first recorder from the new SEFRAM range and is equipped with a touch screen. The 15.4 inches colour screen allows clear and simple display of your recordings. The DAS 1600 includes a 500 GB hard disk and both USB & Ethernet. It can record up to 72 analogue channels and 16 logical channels. New acquisition cards complete the offering to provide solutions to all industrial applications.
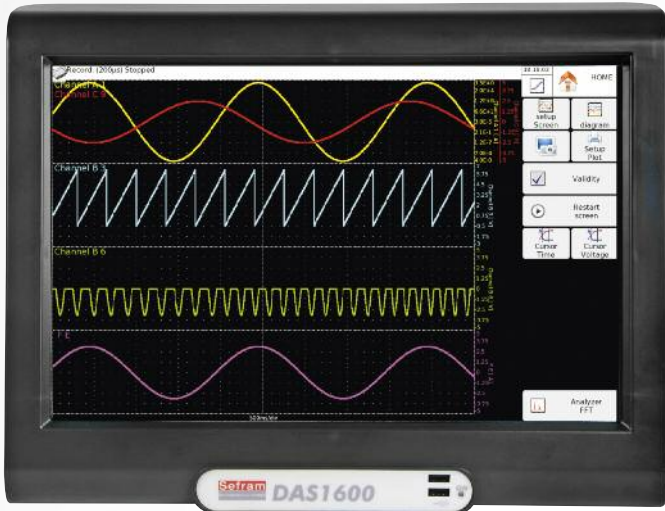
Capabilities

- 6 to 72 analogue channels
- Universal inputs
- DC, AC+DC RMS voltage measurement
- Frequency, thermocouple, Pt100/Pt1000
- Strain gauge measurement
- 16 logical channels
- 16 bit resolution
- 15,4 inch TFT color touch screen
- 1 Mega sample/s sampling rate
- 128Mword memory
- 500 GB internal hard disk
- Interfaces: 6 x USB, Ethernet, XGA
- Power analysis function: 50Hz, 60Hz, 400Hz, 1kHz
- IRIG, GPS and battery options
- WiFi option
- Go-No-Go mode
- MIL-STD-810G option
- IEC 1010 CAT III 600 V


Rack version in option

Analogue cards for all applications, from 6 to 72 channels :

The DAS 1600 is equipped with 6 slots which allows the use of combinations and multiples of the following cards:

- 6 channel (isolated) universal card, DC, RMS, AC+DC, up to 500VDC/AC
- 12 channel multiplexed card, DC voltage, temperature
- 6 channel isolated strain gauge card, voltage, thermocouple, Pt100/Pt1000
- 6 channel universal isolated card DC, RMS, AC+DC up to 1000V AC/DC (please contact us for details)
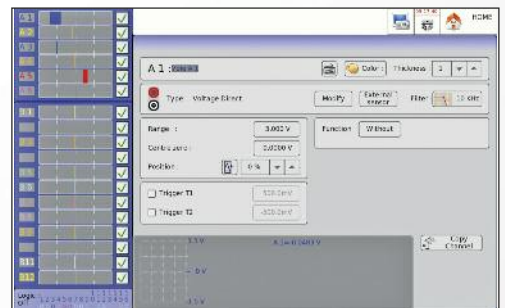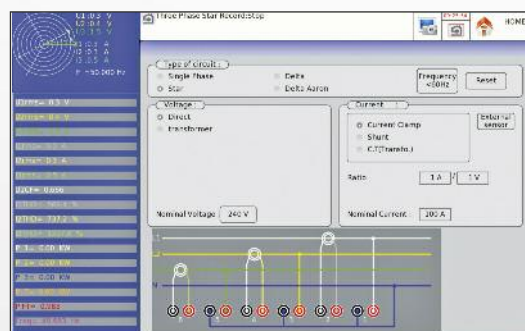

Main menu

Intuitive man-machine interface:

The 16/10 format, 15,4 inch touch screen allows quick access to all essential setup and analysis functions.
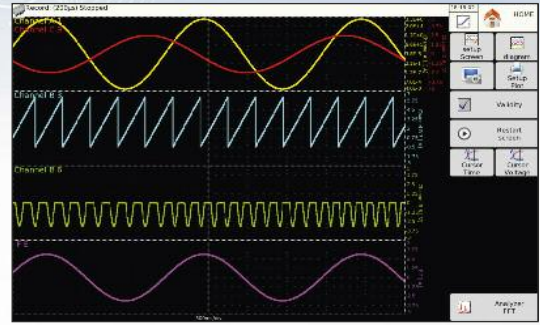

Setup menu

Trigger menu

DAS1600 / DAS1600SV
Paperless Data acquisition solution with 72 analogue channels!

■ Real time acquisition on 500 GB hard disk

To ensure the most accurate measurement recording, the new Sefram family of recorders saves your data directly onto the hard disk - at up to 1MHz for 6 channels simultaneously.

■ An IRIG card for greater accuracy of your recordings:

The IRIG option allows you to synchronize the recorder according to a reference time*
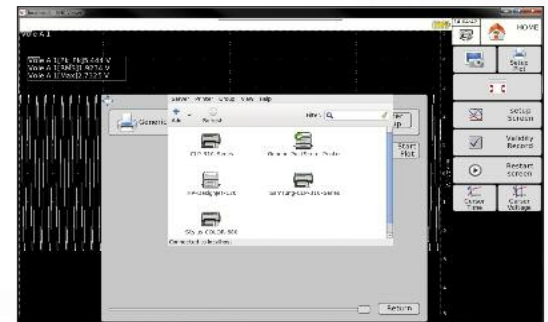*Synchronization via GPS with a coded time signal.

■ Operation with battery*
*optional

Insurance against power cuts - the DAS 1600 optional battery provides up to 3 hours battery life to minimize the risk of interruptions to data acquisition.

■ Printing

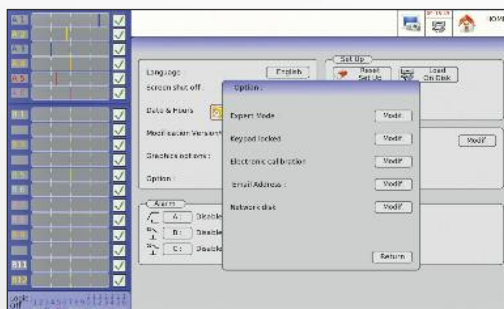Compatible with all printer (post script).

■ Simplified data communication and processing:

With the Virtual Network Computing software, you can control the DAS 1600 simply and effectively via a computer or a compatible tablet.
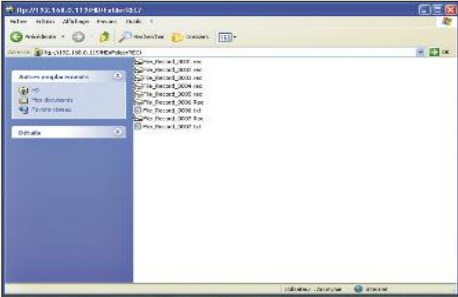
■ Server disk management

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DAS1600 / DAS1600SV
Paperless Data acquisition solution with 72 analogue channels!
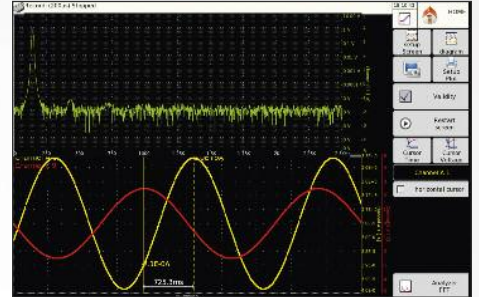
◼ FTP: easy transfer of records

File transfer and display with FTP via TCP-IP network.

◼ WiFi

The DAS 1600 combines high performance and management simplicity thanks to WiFi. Every recorder application can be remotely controlled.

◼ FFT analysis

FFT analysis operates in real time. You have easy access to all functions.

Sophisticated trigger modes

The DAS 1600 allows all kinds of trigger:
- On rising or falling edge
- Wait and delay time
- Standard GO-No-Go mode
- On external logical signal
- Pre and post trigger

◼ Different operating modes

Expert mode: access to all setup functions. User mode: restricted access.

◼ XY mode with "pen up and down" function
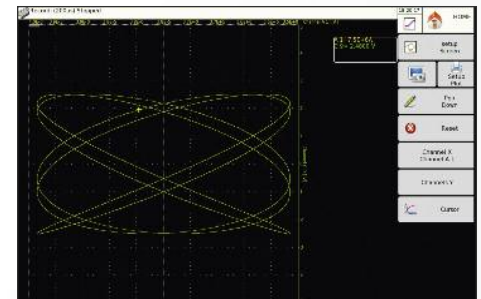
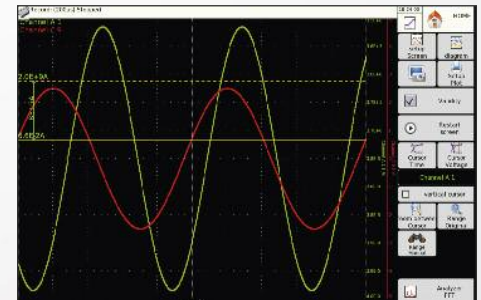Real XY recorder: the DAS 1600 will be a good replacement for your analogue graph plotter.

◼ Digital display

Displays all saved parameters on a single screen for convenience.

◼ Zoom Mode Analysis

Zoom between two cursors in order to visualize the rising and falling times of specific signals.

DAS1600 - New functions

■ SENT sensors analysis and PWM measurements


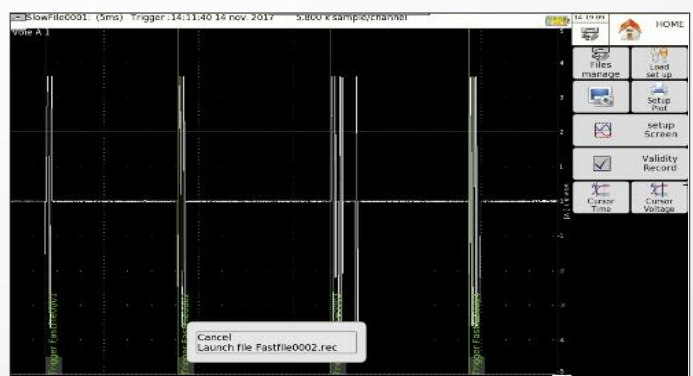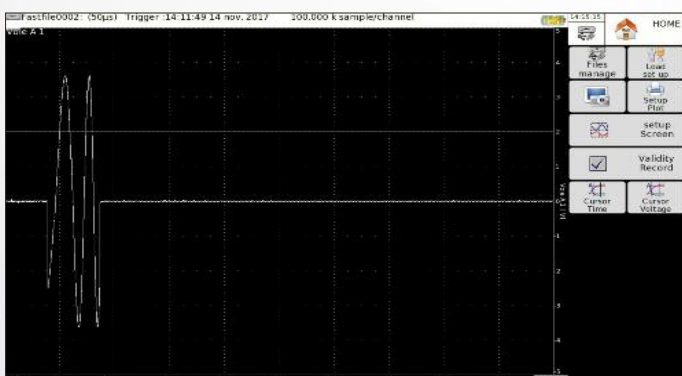Display of SENT sensors data and PWM measurements.

The SENT / PWM factory option is fixed on the back of DAS1600. It provides 20 SENT sensors input and 20 PWM input.
P/N: 916009600

■ Dual records with different speed

This function allows to record one or more channels with 2 sampling rates and in two separate files.
For example: if you record with a trigger, one file will contain the entire signal and the other file will contain the signal after the trigger with the possibility of a different sampling rate.
This function is very interesting for a detailed analysis of disturbance.
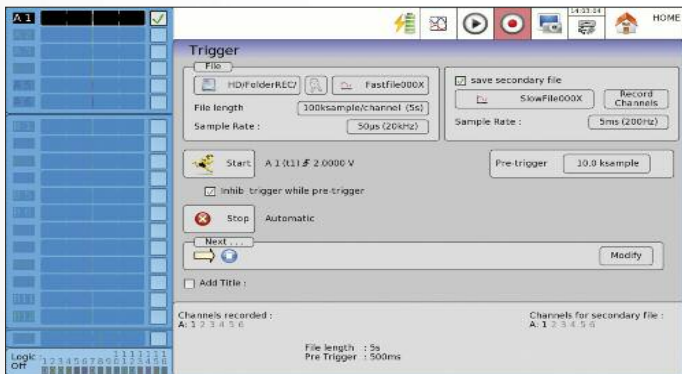
Trigger menu to define the sampling rates for each records and files.

Display of selected events and hard disk saving.

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DAS1600 - New functions
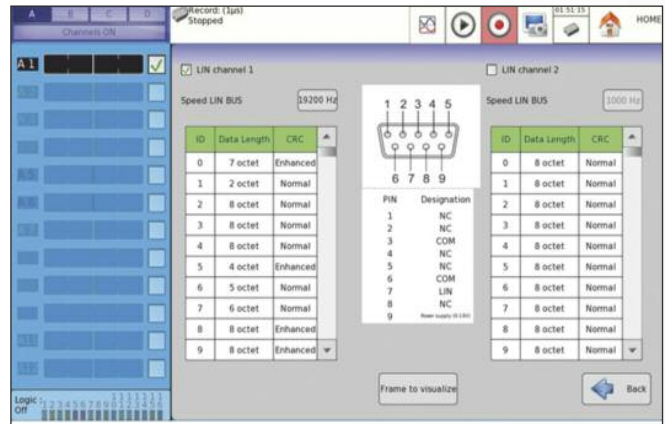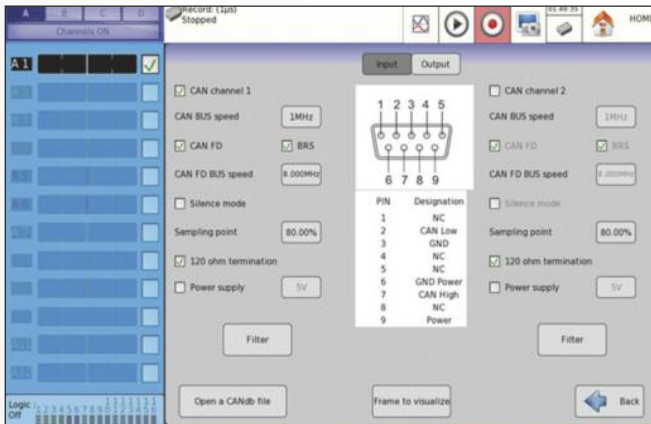
■ CAN-LIN bus analysis

With this new feature, you can analyze the following Buses:
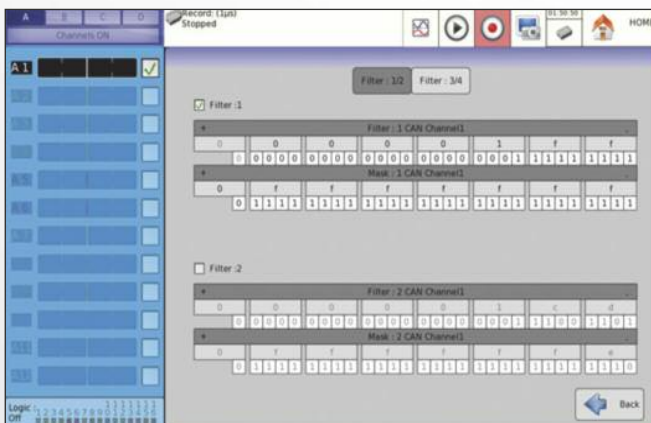- CAN
- CAN FD
- LIN
- CAN DB

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

CAN - LIN bus (factory option):
P/N 916002000

Easy and intuitive setup of all types of buses
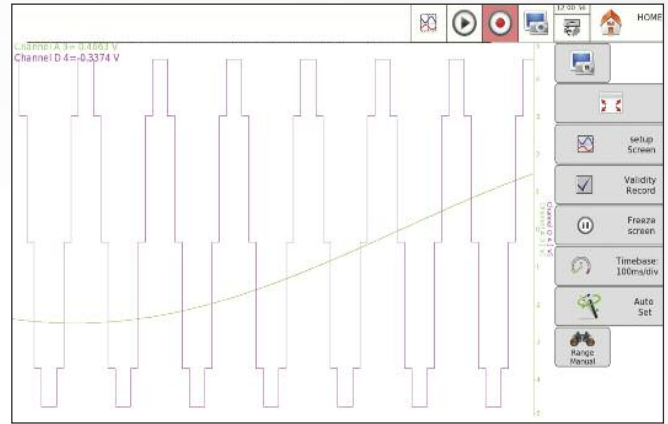

Hardware filtering of CAN frames

Display of complete frames of the selected bus
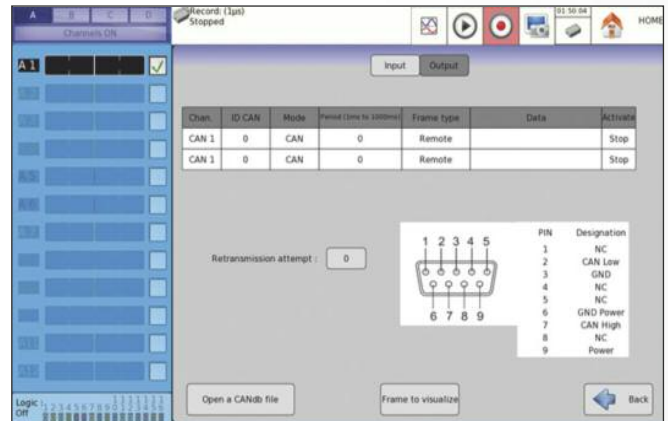
DAS1600 - New functions

■ CAN-LIN bus analysis

Graphical Waveform conversion with analogue signal comparison

CAN frames recording in CSV format

Periodic frames output on the CAN bus

■ CAN technical features

- 2 CAN isolated input ports
- Protocol: CAN 2.0A/B and CAN-FD
- Baud rate: 10kbps to 1Mbps for CAN and 1 to 8 Mbps for CAN-FD
- Waveform conversion: up to 18 waveforms (100 kHz sampling)
- CAN real-time frames viewer: up to 100 frames
- Can filters: up to 4 filters based on frame ID
- CAN recording: CAN waveforms are re corded in REC format, CAN frames in CSV format
- External supply: 5VDC and 12VDC
- Periodic frames output (one per bus, up to 64 data bytes)

■ LIN technical features:

- 2 LIN isolated input ports
- Baud rate: up to 20kbps
- Protocol: LIN 1.3 to 2.2
- Waveform conversion: up to 18 wave forms (100 kHz sampling)
- LIN recording: LIN waveforms are recorded in REC format, LIN frames in CSV format

DAS1600 - New functions

■ Script editor to add more calculation features

Use the 24 mathematical functions available in the DAS800 / 1600 library to process the calculation you need.
These calculations allows you to convert and analyze the data in real time.
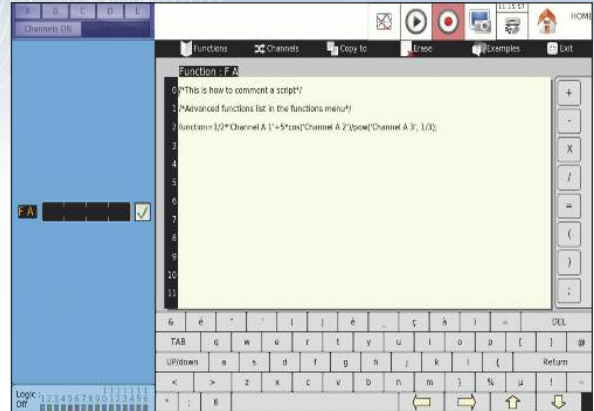
■ REC type files

Use our .REC data file to develop your dedicated analysis solution of the records.
Make the process of analysis automatic with your dedicated software.
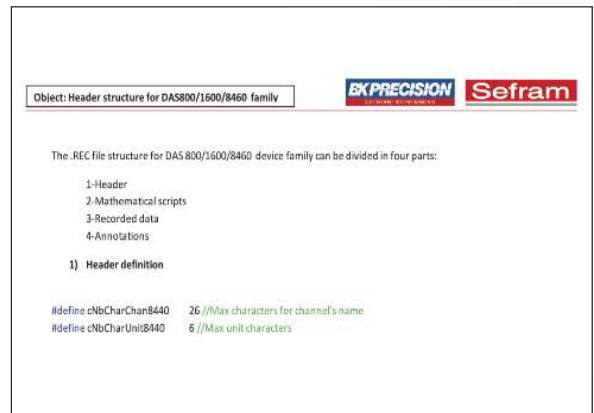
■ Remote programming and control

Sefram provides the complete set of commands to program and remote control your recorder. You can easily integrate our data acquisition solutions in you test bench or interface them with your ATE equipment.

SEFRAM 8460
Sefram 8460 series:

Thermal Data acquisition solution with 270mm paper width, up to 36 channels and panoramic touch screen

SEFRAM 8460

Capabilities

- 6 to 36 analogue channels
- DC, RMS AC+DC voltage measurements
- Frequency, Thermocouples, Pt100/Pt1000, counter
- Strain gauge board (option)
- 16 logical channels
- 16 bit resolution boards
- Panoramic 15" TFT touch screen
- 270 mm thermal printer
- Maximum sampling rate: 1 Mega sample/s per channel 1Mech /sec par voie
- 100 kHz bandwidth
- Power analysis function
- Memory: 32 Mwords
- Math functions
- Go-No-Go mode
- Automatic measurements
- 500 GB hard disk
- Interfaces: 4 x USB, XGA, Ethernet
- Optional rack mount kit
- CEI 1010 CAT III 600 V

■ Highly flexible printing

To suit your specific and various applications, you can configure and select all printing parameters, including plotting mode (f(t) or text), paper speed (1 mm/h to 200 mm/s), number of traces or grid pattern.
For all channels, you can add annotations, specifying the date, the time, the paper speed and the channel names.
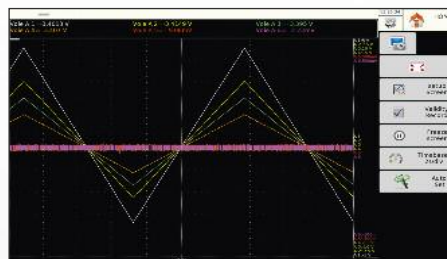
■ A panoramic touch screen

The 8460 recorders are equipped with a 15,4'' touch screen: you can view your signals and your records with full details. Display setup and page setup give very flexible view and print to match your requests for all your applications
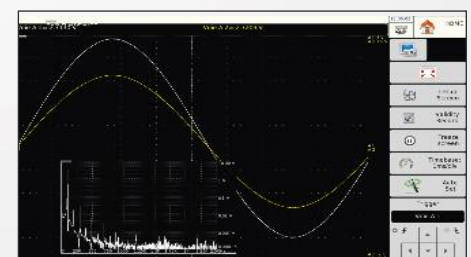

■ Data analysis and usage

The 8460 provides 20 automatic measurements that can be fully customized. The measurement file processing can be directly operated on to the recorder. Thanks to cursors and various zoom functions - in order to interpret your recordings with the best possible accuracy.

■ Data saving and access:

Record into the internal hard disk at up 1 Ms/s for 6 channels simultaneously. Multiple USB ports are provided to external memory devices (USB memory…). Very fast and easy transfer of your records via the standard Ethernet interface.

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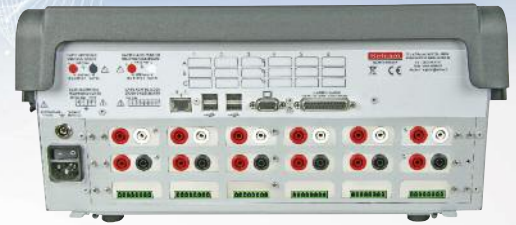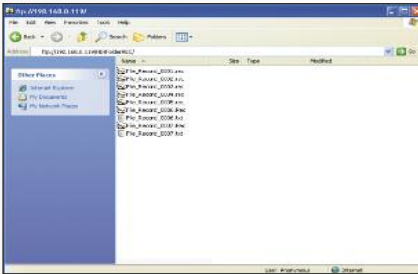
SEFRAM 8460
Sefram 8460 series

◼ A modular recorder to match all your applications

The Sefram 8460 provides 3 slots and can be equipped with measurement boards to be selected in the 4 types available.
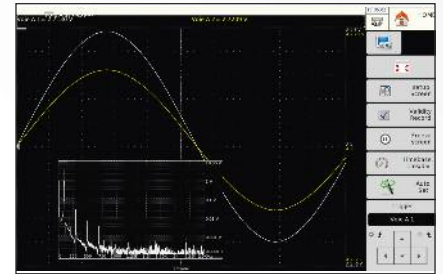
◼ FTP: easy transfer of records.

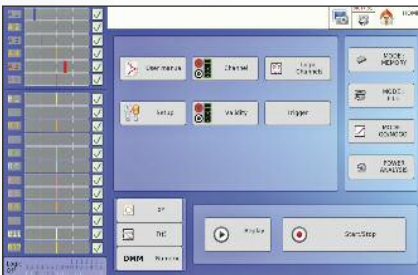File transfer and display with FTP via TCP-IP network.

◼ WiFi

The 8460 combines high performance and management simplicity. Thanks to WiFi: every recorder application can be controlled remotely.
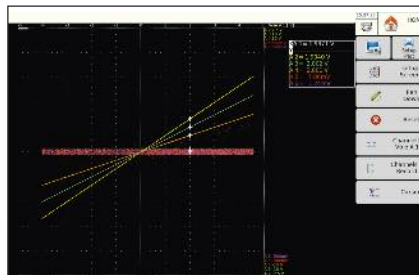
◼ FFT analysis

FFT analysis operates in real time. You have easy access to all functions.

◼ Different operating modes

Expert mode: access to all setup functions.
User mode: restricted access.

◼ XY Mode with "pen up and down" function

Real XY recorder: the 8460 will be a good replacement for your analogue graph plotter.

◼ Choice of 4 input boards:

4 types of input boards are available for your 8460 recorder:

Universal high voltage board: 6 universal isolated analogue channels.

Universal board: 6 universal isolated analogue channels.

Strain gauge board: 6 isolated channels.

Multiplexed channels board 12 analogue multiplexed channels.

Set up quickly your recorder to match you application: you can use the measurement boards dedicated to your signals (4 different boards can be plugged in).

# Network analysis for DAS1600 and 8460 (up to 1000 Hz)

Control your electrical power consumption (networks, motor, …)
Manage your energy spending, monitor your network

The standard network analysis mode on the SEFRAM recorder solutions allows you to visualize and record power, energy and harmonic measurements easily.
Accurate and advanced, this tool allows a quick visualization and a simplified exploitation of the measured values: energy and time gain!

Applications:

- Real time follow-up and historical analysis, comparison of the power consumptions,
- Preventive and corrective maintenance,
- Measurement and verification of gains from economy improvement schemes

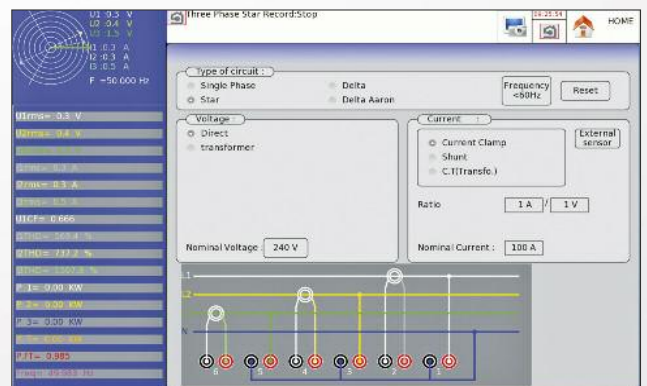## ■ Record and set your various measurements precisely to suit your measurement task.
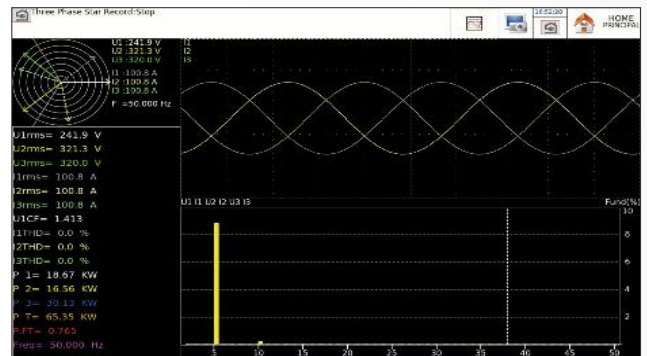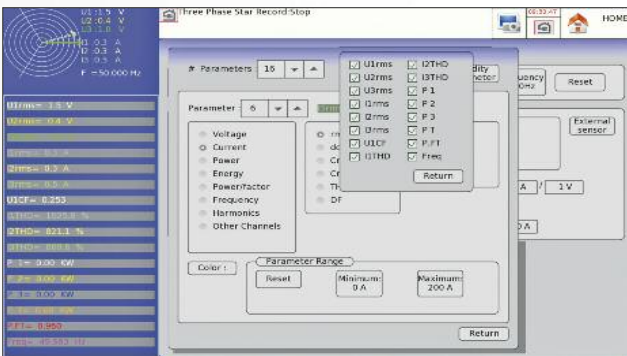
Capabilities

- Single-phase, three-phase, networks
- Multiple network analysis
- Recording capacity up to 24 parameters (U, I, W, Wh, …)
- Customizable frequency 50Hz, 60Hz, 400Hz and 1000Hz.
- Fresnel diagram
- Oscilloscope mode
- Calculation and Memorization of harmonics
- 16 x measured values: average, true RMS, peak, peak factor, THD, DF, active/apparent/reactive power, power factor and consumed energy values.
- Real time visualization of the measured values on Word® file.
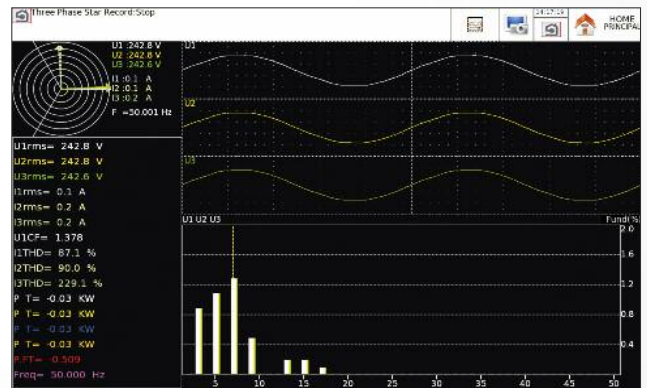
The measurements are operated via current sensors (flexible clamps from 0 to 3000 AAC, or current clamps, or external shunts) and direct voltage inputs (maximum voltage depends on the board used).

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Network analysis for DAS1600 and 8460

Sefram includes this new feature in both paper and paperless recorders. You can analyse and monitor multiple independent three-phase networks by using our universal input board or the high voltage board, with excellent safety conditions for the user.
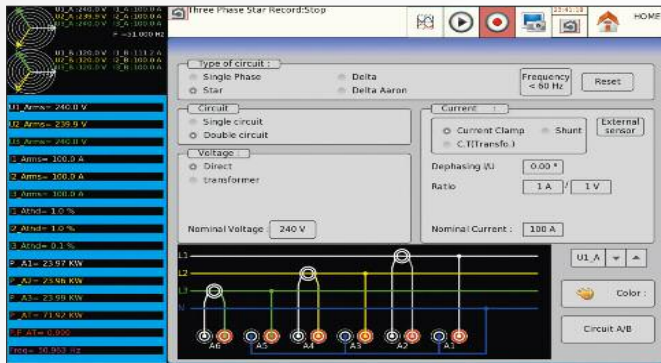
View on a single screen all parameters and mesurements for both networks, with two Fresnel diagrams. You can use current clamps selected in the recorder library: all measurements will be calculated and displayed with clamp parameters (transformer ratio).
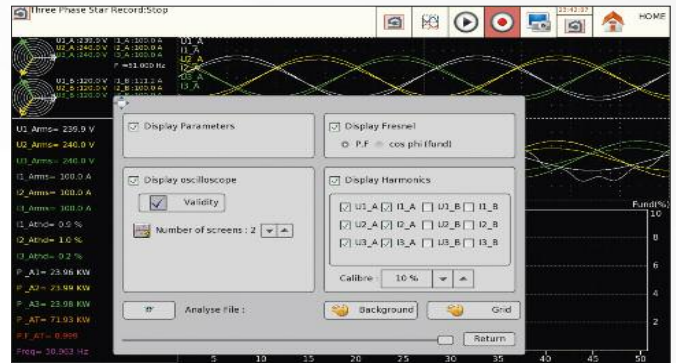
With the setup menu, you can select the parameters you want to measure, display and record.
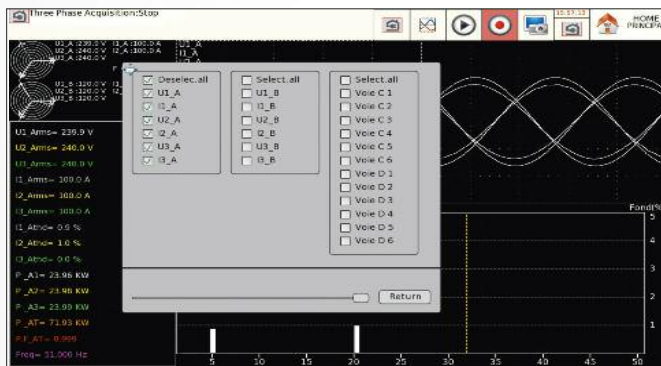
You can select currents and voltages for the oscilloscope mode and the harmonics calculation.

Complete view of recorded parameters.
Real time measurement of power, current and voltage.
Harmonics are calculated and displayed up to rank 50.
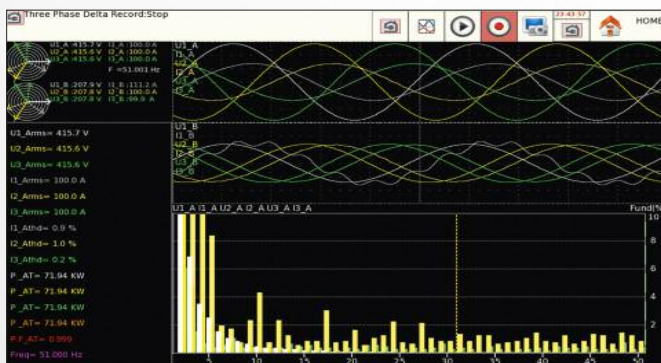
A single screen for all measurements and graphs: voltage, current, power, Fresnel diagrams, harmonics and real time oscilloscope.
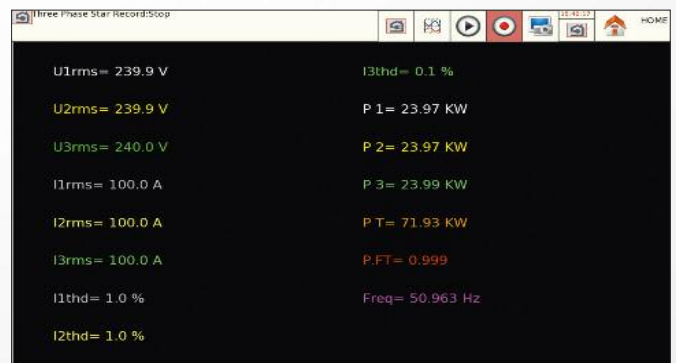
Digital display: all measurements are displayed in text mode.

A complete familly of mini dataloggers

■ Mini dataloggers with display

SeframLOG 1620

SeframLOG 1601

SeframLOG Capabilities

- ALCD, 3 digit
- Temperature measurement and record (LOG1601, LOG1620) from -40°C to +85°C
- Relative humidity measurement and record (LOG1620) from 0% to 95%
  Memory: 50,000 measurements
- Programmable alarms
- Built-in hanging system
- Supplied with PC software and USB cord

Main functions of the PC software:
- Set up of SEFRAMLOG 1601 or 1620
- Download of records, erase records
- Display of records, with zoom and cursors
- Export of data to Excel™
- Graph and data printing
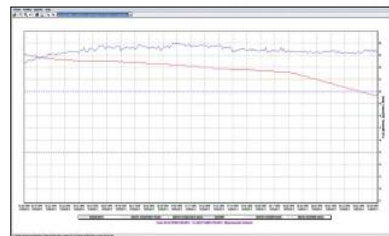
Delivered with: USB cable, software, battery and user manual
Applications: Temperature and humidity monitoring, HVAC monitoring, fridge temperature monitoring, heating system monitoring, cold chain,......

■ The solution for all your recording issues
Mini recorders for monitoring temperature, humidity, voltage and current

Capabilities

- Ease of use
- Maximum recording: 2years
- Maximum memory: 60 000 measurements
- Infrared interface for data transfer to a PC.
- Programmable alarms
- Maximum vertical resolution: 12 bits
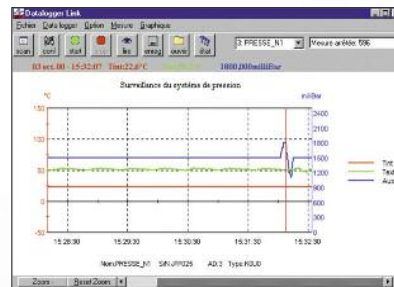
SI693
- Kit including software, infrared interface and USB cable.

Technical	SEFRAM LOG 1501P1	SEFRAM LOG 1520-K	SEFRAM LOG 1522-K	SEFRAM LOG 1525-1	SEFRAM LOG 1530-K	SEFRAM LOG 1530-K1	SEFRAM LOG 1555
Ti (1) with internal sensor	-40 to+85°C	-40 to+85°C	-40 to+85°C	-40 to+85°C	-40 to+85°C	-40 to+85°C	-40 to+85°C
Text (2) per type "K" probe	-	-50 to+150°C	-	-	-50 to+150°C	-100 to+1200°C	-
Text (2) per "K" probe 2 inputs	-	-	-50 to+150°C	-	-	-	-
Humidity	-	5%to 95%	-	-	-	-	-
Text (2) per Pt100 probe	-	-	-	-	-	-	-
Voltage input 0-25V	-	-	-	●	●	●	●
Current input 4-20mA*	-	-	-	●	●	●	●

(1) Ti: internal temperature
(2) Text: external temperature

4 input

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Sefram customer support

Sefram *Industrial site*

▮ Technical support

Our technical support team is ready to help you to get the most out of all of our Sefram products.

We will answer all your technical questions:

- Help to start with your instrument
- Technical information on products
- Software install and setup
- Selection of products for specific applications

Contact us: +33.(0)4.77.59.36.97

Free software updates for all Sefram products

Our website provides the latest embedded software for all products. Please browse our website to check the latest updates for your products.
www.sefram.com

▮ Sefram's Services:

To contact our after-sales department by e-mail: services@sefram.fr.

To ship back material for calibration or repair:

SEFRAM - SAV - 32, rue Edouard Martel BP 55 - F42009 SAINT-ETIENNE Cedex 2 - France.

To ease the receipt, we ask you to download from our website and fill the RMA as indicated on the PDF.

The RMA filled should be inserted in the parcel with the product returned (one RMA per product).

Using SEFRAM's services, you will:

- Get the best price for repair and maintenance
- Get a quote in a very short period of time
- Get a warranty for your repair or upgrade

CE

For assistance and ordering

Sefram