Recorder
Product Guide

2013/2014

The best technology distilled to give
unbeatable performance and support.

ERIMEC
MESSBAR MACHEN, WAS MESSBAR IST

Trigger

File

HD/FolderREC/   File_Record_000X   ☐ save secondary file

File length :   No limit

Sample Rate :

external (LC16)	20ms
1µs	50ms
2µs	100ms
5µs	200ms
10µs	500ms
20µs	1s
	2s
	5s
200µs	10s
500µs	20s
1ms	1min
2ms	2min
5ms	5min
10ms	10min

Start   Awaiting Delay:00h00m05

Stop   Modify

Pre Trigger :0s

HOME

Sefram DAS1600

8440 THERMAL RECORDER

HANDHELD RECORDER

Sefram
INSTRUMENTS & SYSTEMES
MESSBAR MACHEN, WAS MESSBAR IST

Each SEFRAM recorder is designed and manufactured in Saint-Etienne/France

DAS1600

Paperless recorder 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.
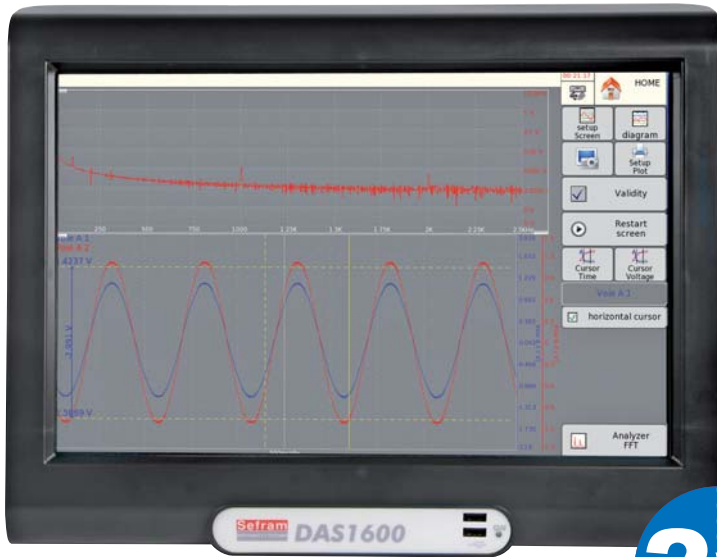

Capabilities

- 6 to 72 analogue channels
- Universal inputs
- DC, AC+DC RMS voltage measurement
- Frequency, thermocouple, PT100
- Strain gauge measurement
- 16 logical channels
- 14-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
- IEC 1010 CAT III 600V

2 WARRANTY YEARS

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

The DAS 1600 is equipped with 6 slots which allow 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, PT1000
- 6 channel universal isolated card DC, RMS, AC+DC up to 1000 AC/DC (please contact us for details)
- 4 channel differential fast card, 5MHz bandwidth (please contact us for details)
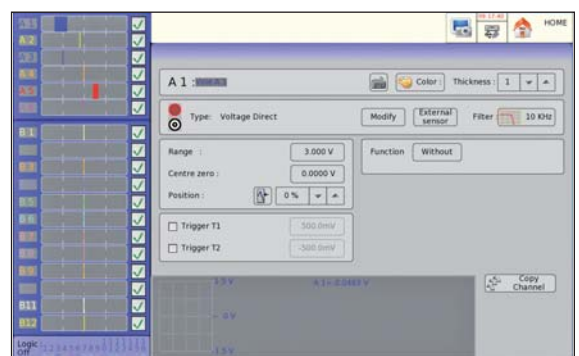
Main menu

▶ 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

Sefram INSTRUMENTS & SYSTEMES
To select the right recorder for your needs *Please visit our website : www.sefram.fr*

DAS 1600

Paperless recorder 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 200 KHz for 6 channels simultaneously.
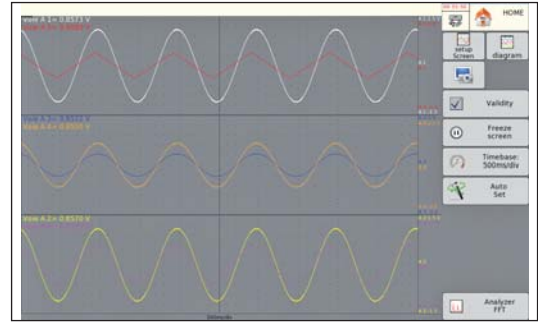
▶ An IRIG card for greater accuracy of your recordings :

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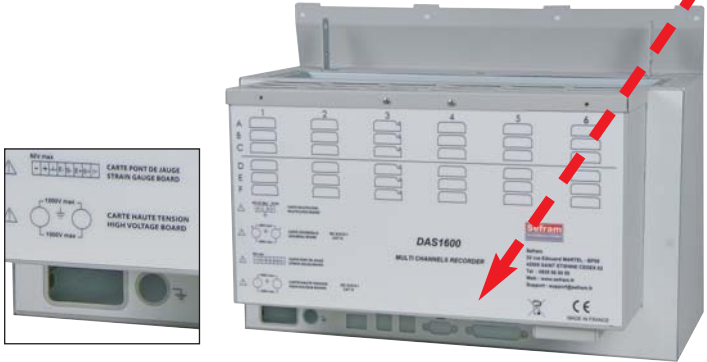
*Synchronization via GPS with a coded time signal.

▶ Operation with battery*
*optional

Insurance against power cuts - the DAS 1600 optional battery provides up to 1 hour battery life to minimize the risk of interruptions to data acquisition.

▶ Printing

Compatible with all printers available on the market (post script format).

▶ 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.
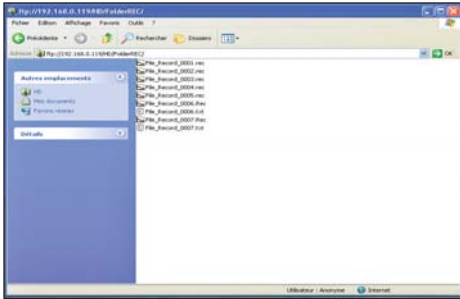
▶ Server disk management
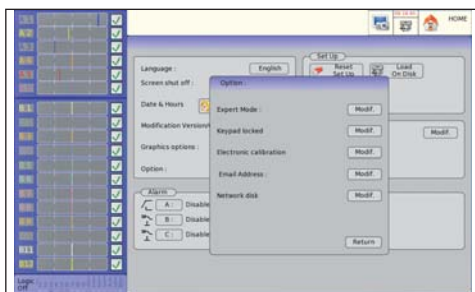
DAS1600

Paperless recorder with 72 analogue channels !

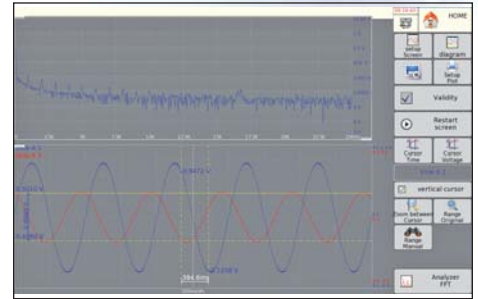### ▶ FTP : easy transfer of records

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 controlled remotely.

▶ 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.

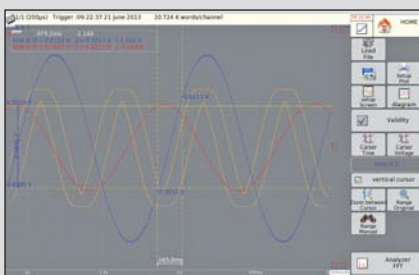

▶ Different operating modes

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

▶ Digital display

Displays all saved parameters on a single screen for convenience

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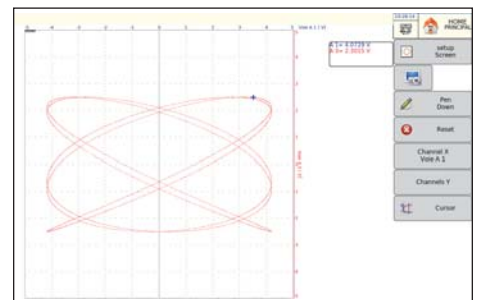
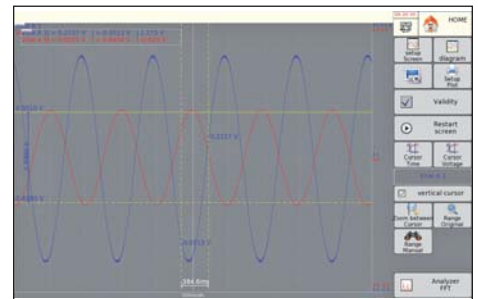Real XY recorder : the DAS 1600 will be a good replacement for your analogue graph plotter.

▶ Zoom Mode Analysis

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

DAS 20 & DAS 40

Multifunction handheld recorders

▶ ## Handheld solution for all your data acquisitions

DAS 20/40

Capabilities

- 2 or 4 analogue channels
- 16 logical channels
- 10 hours autonomy (recording)
- Standard 8 Gb hard disk
- 1 Mega sample/s sampling rate
- USB & Ethernet interfaces
- Math and dual calculation functions
- IEC 1010 600V CAT III

▶ ## Universal inputs for all type of measurements

Bandwidth	100 kHz
Sampling rate	1 Mega sample/s
Voltage	1 mV to 1000 V DC 425 V RMS
Temperature	Thermocouples
Counter	10 Hz to 100 kHz
Current	AC+DC current (external shunt or accessory clamp)
Logical channels	16 logical channels 2 alarms output 0-5 V

The DAS 20 & DAS 40 are supplied with a carrying pouch and a complete set of accessories.

Sefram INSTRUMENTS & SYSTEMES To select the right recorder for your needs *Please visit our website : www.sefram.fr*
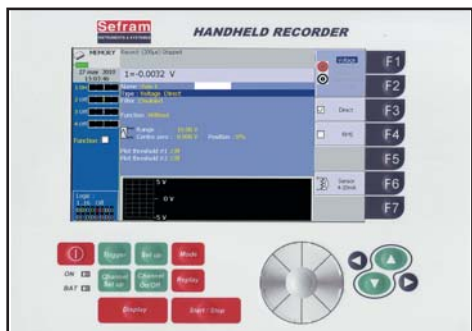
DAS 20 & DAS 40
Multifunction handheld recorders

▶ ## Printing on thermal paper

For the Sefram DAS 20 & DAS 40 recorders it is possible to install a thermal printer module (110mm with, 10 meters thermal paper roll). This module is a factory option.

▶ ## A simplified man-machine interface

DAS 20 & DAS 40 recorders have been designed for intuitive use and for saving time. They can be used in maintenance departments, for failure diagnostic, for the monitoring of electrical parameters or for temperature measurements.
All the acquisition parameters are displayed clearly and simply. The user can define triggers and functions according to the application.

▶ ## Flexible recorders

DAS 20 & DAS 40 have excellent flexibility :analogue inputs, logical inputs, calculation between channels, filters, triggers, graphical display or text display. Everything assistance is provided to simplify the acquisition of your measurements.
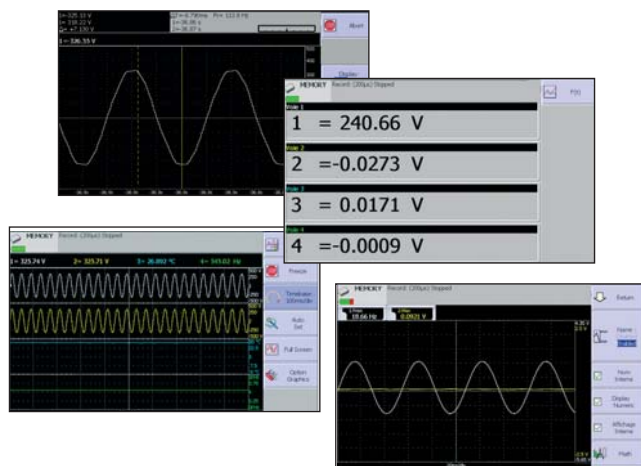
▶ ## Application software

With the USB or Ethernet interfaces you can transfer your records to a computer and analyze them with SEFRAM Viewer. Many export functions and types are available (Excel™, text or BMP).
SEFRAM Pilot is used to remote control your recorder.

▶ ## Power analysis function

This function provides all the necessary measurements :
- • RMS, mean and peak values
- • Active, reactive, apparent power, power factor and DF
- • Fresnel diagram
- • Harmonics up to rank 50
- • Oscilloscope mode
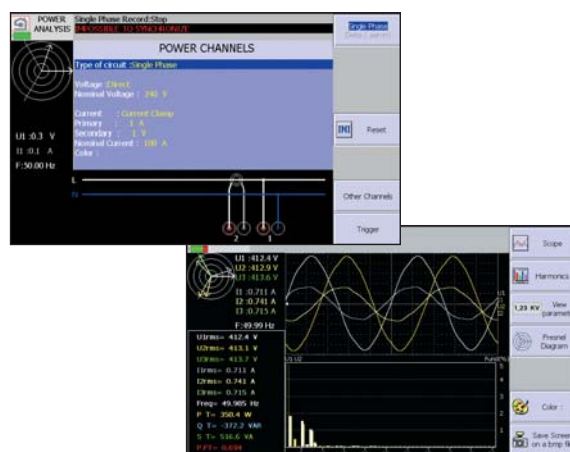
SEFRAM 8440

8440 series : thermal recorders with 270 mm paper width and up to 36 analogue channels

SEFRAM 8440

-Power/Energy analysis
-Strain Gauge board

2 WARRANTY YEARS

Capabilities

- 6 to 36 analogue channels
- Universal inputs
- DC, AC+DC RMS voltage measurement
- Frequency, thermocouple and PT100 measurement
- Strain gauge board (option)
- Energy/power analysis
- 16 logical channels
- 16-bit resolution
- 1 Mega sample/s sampling rate
- 200kHz bandwidth
- 270mm paper width
- 20 automatic measurements
- 12 inch TFT LCD screen
- 32 Mword memory
- 250 Gb internal hard disk
- Go-No-Go mode
- Interfaces: USB, Ethernet, XGA
- IEC 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.

▶ Data saving and access

Record onto the internal hard disk at up to 100 kHz 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.

▶ Data analysis and usage

The 8840 provides 20 automatic measurements that are completely customizable. The measurement file processing can be directly operated onto the recorder thanks to cursors and various zoom functions - in order to interpret your recordings with the best possible accuracy.

▶ The choice of universal inputs

3 types of input cards are available :
- A universal input card comprising 6 analogue isolated channels
- A multiplexed input card comprising 12 channels
- A strain gauge card comprising 6 isolated channels.

▶ A large colour screen

The 8400 recorders are equipped with a 12 inch screen, to visualize in real time the present or previously saved traces. The various layout options provide the right configuration to suit each user's applications.

To select the right recorder for your needs *Please visit our website : www.sefram.fr*
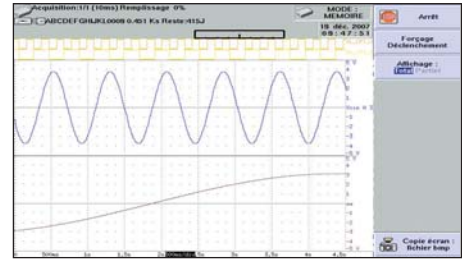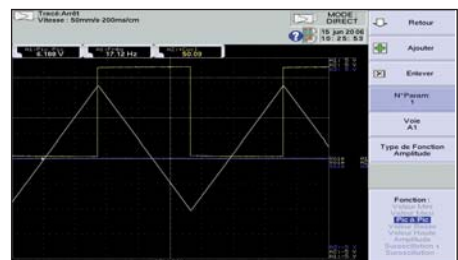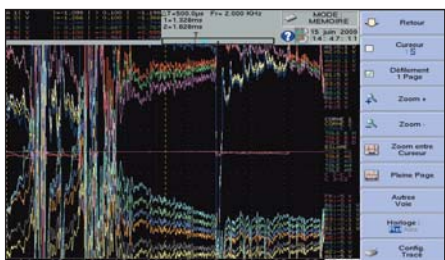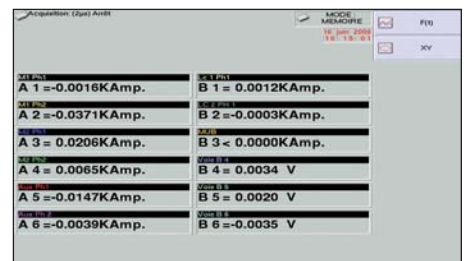
SEFRAM 8210/8211

Recorders equipped with all the vital functions to make your universal measurements.

Convenience and ease of use characterize the SEFRAM 8210 & 8211 graphical recorders with two channels : one function per key, quick acquisition and visualization on graphical screen (SEFRAM 8211), recall of zero location… both models are equipped with a carrying handle and a protection cover for outdoor use. They are also rackable, for test bays integration.

Capabilities

- 2 synchronized channel recorder with universal inputs
- Feather trace on 250 mm paper, with a roll speed programmable internally or with an external clock.
- ± 2 caliber original offset
- Programmable filters to clear the noise of some measurements
- RS-232 interface
- Handheld or rackable

SEFRAM 8211 characteristics :
- Capture of transient signals
- Parameter writing
- Alarms (2 available relays)
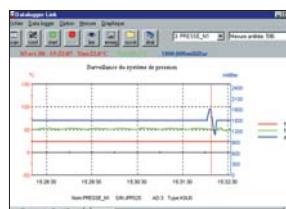- Backlight display

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 1510-K	SEFRAM LOG 1510-K1	SEFRAM LOG 1520-K	SEFRAM LOG 1522-K	SEFRAM LOG 1525-1	SEFRAM LOG 1530-K	SEFRAM LOG 1530-K1	SEFRAM LOG 1555
Ti 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	-40 to +85°C	-40 to +85°C
Text per type "K" probe	-	-50 to +150°C	-100 to +1200°C	-50 to +150°C	-	-	-50 to +150°C	-100 to +1200°C	-
Text per "K" probe 2 inputs	-	-	-	-	-50 to +150°C	-	-	-	-
Humidity	-	-	-	5% to 95%	-	-	-	-	-
Text per PT100 probe	-	-	-	-	-	-	-	-	-
Voltage input 0-25V	-	-	-	-	-	●	●	●	●
Current input 4-20mA*	-	-	-	-	-	●	●	●	●

* with accessory 915003120 or 915003121 — 4 input

**SEFRAM Log 1501P1, 1520P1, 1525-1 with programmable trigger threshold**

NETWORK ANALYSIS (up to 1000Hz)

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
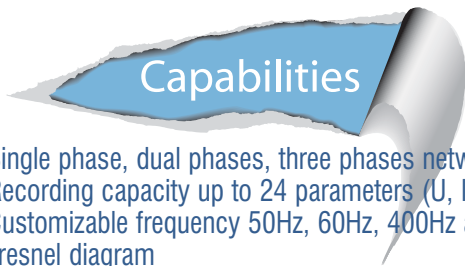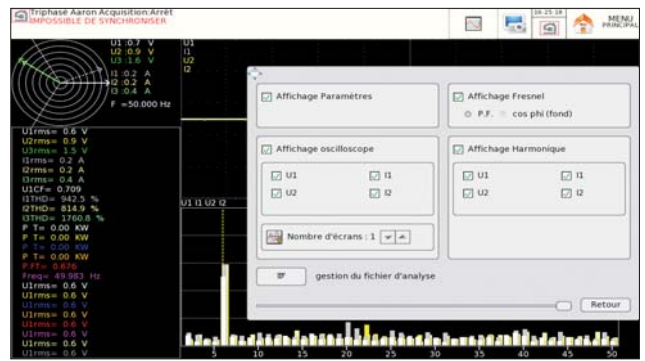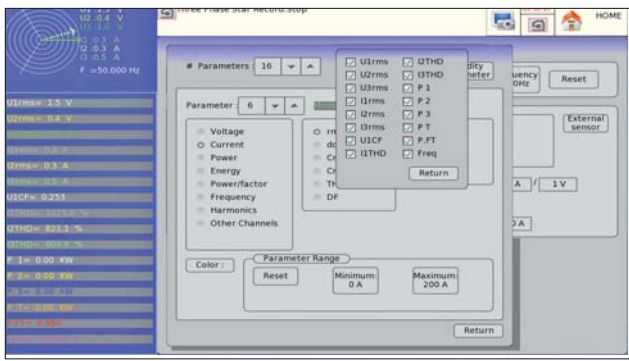
- Single phase, dual phases, three phases networks
- Recording capacity up to 24 parameters (U, I, W, Wh, …)
- Customizable frequency 50Hz, 60Hz, 400Hz and 1000Hz.
- Fresnel diagram
- Oscilloscope mode
- Memorization of harmonics
- 16 x measured values : average, true RMS, peak, peak factor, THD, DF, active/apparent/reactive power, power factor and consumed energy values.
- Real time visualization of the measured values on Word® file.
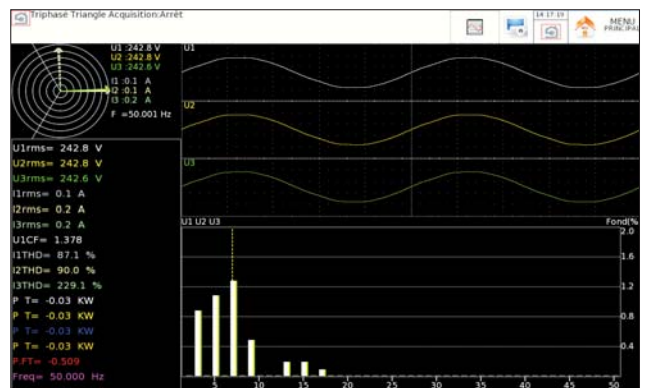
The measurements are operated via current sensors (flexible clamps from 0 to 3000 AAC, or current clamps, or external shunts) and direct voltage inputs up to 1000 VDC or 500 VAC.
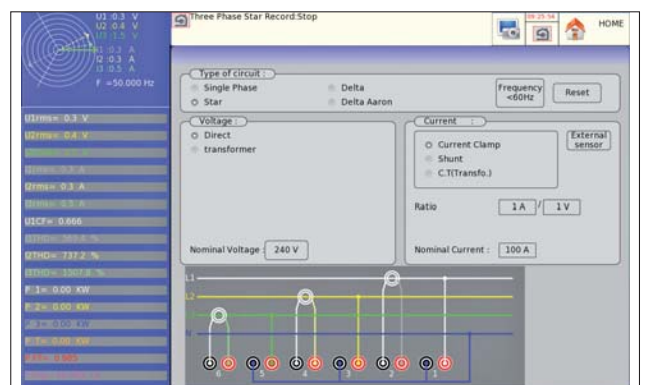
SEFRAM VIEWER:

This licence 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.
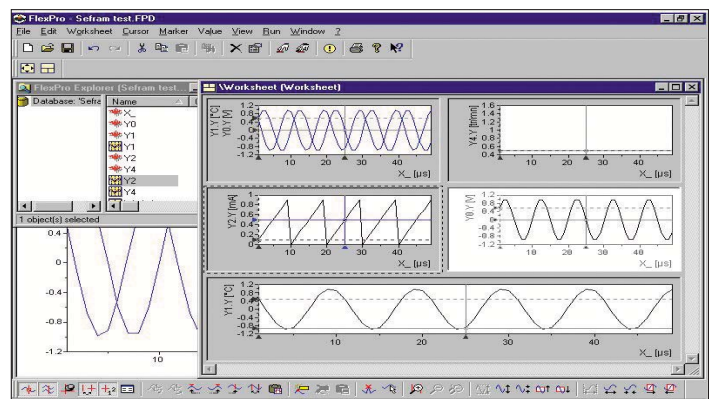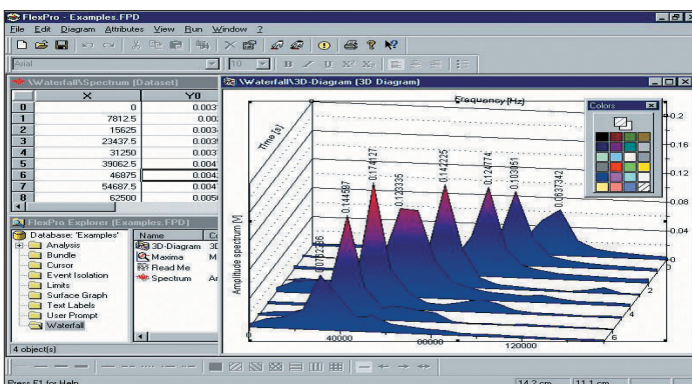

Capabilities
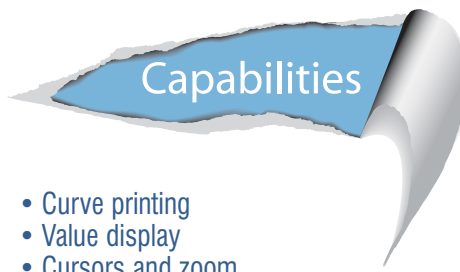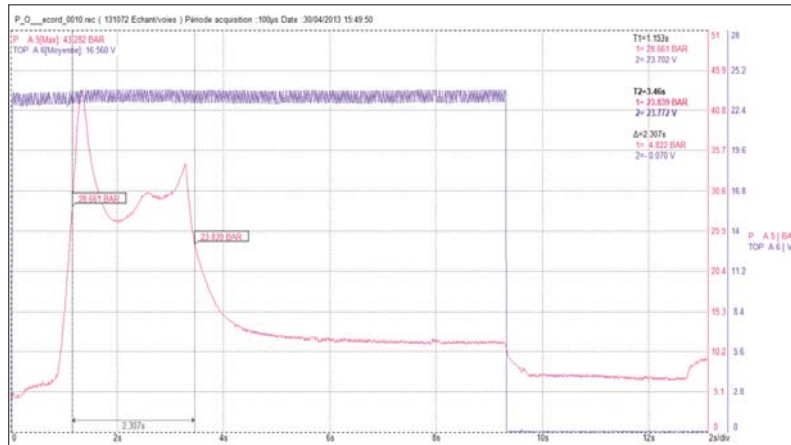
- Curve printing
- Value display
- Cursors and zoom
- File concatenation
- 8 math calculations
- Up to 120 character annotations
- Bitmap, Excel®, txt, csv exportation
- Configuration of the display

▶ FLEXPRO™ : a powerful software for your data analysis.

With Flexpro™ :
- More than 100 functions of statistical and math analysis
- Graphical representation
- Measurement report editing

Sefram service

Our service department provides the best possible support for your products: periodic maintenance, product upgrades and repair.

Software updates can be downloaded free of charge from our website.

ACCESSORIES FOR

Differential probes kits

ELD.1052 - 700 V Kit, 3 phases

Contains 3 probes (GE.8100) ; 3 BNC/Ban. adapters; 3 test leads; 3 power supplies and a carrying pouch.

ELD.1053 - 1500 V Kit, 3 phases

Contains 3 probes (GE.8115) ; 3 BNC/Ban. adapters; 3 test leads; 3 power supplies and a carrying pouch.

ELD.1054 - 700 V Kit, 1 phase

Contains 1 probe (GE.8100) ; 1 BNC/Ban. adapter; 1 test lead; 1 power supply and a carrying pouch.

ELD.1055 - 1500 V Kit, 1 phase

Contains 1 probe (GE.8115) ; BNC/Ban. adapter; 1 test lead; 1 power supply and a carrying pouch.

Current clamps

SP 201 - Current clamp (200 AAC, 10mV/1A, Ø15mm)

SP 221 - Current clamp (100 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

Carrying cases

914007500 - Carrying case for DAS 800/800SV/1600

984407500 - Carrying case for 8440

FT CAT ENREGIS/2013A

Connection kits

ELD.1060 - 6 channel connection Kit

Contains 12 Test leads/stack. ban. plugs with retractable sleeve (2mm), 12 mini-clip leads and a carrying pouch

ELD.1061 - Universal 6 channels connection Kit

Contains 12 Test leads/stack. ban. plugs with retractable sleeve (2mm), 12 mini-clip leads, 12 flexible grabbers and a carrying pouch

ELD.1062 - 12 channels low voltage connection Kit

Contains 12 mini-clip leads (one end open 1m) and a carrying pouch

ELD.1063 - 6 channels coaxial Kit

Contains 6 cables BNC/ 2 x ban. (50 ohms, 2m) and a carrying pouch

ELD.1057 - Connection Kit for Power & Energy Analysis

Contains 10 test leads/stack. ban. plug (3m); 1 test lead/stack. ban. plug (25cm) ; 5 Alligator clips; 4 Maxigrabbers; 2 test tips and a carrying pouch

Shunts

910007100 - 0.01Ω, 1%, 10A max, safety banana plugs

910007200 - 0.01 Ω, 1%, 3A max, safety banana plugs

989006000 - 1 Ω, 0.5%, 0.5A max, safety banana plugs

912008000 - 10 Ω, 0.1%, 0.1A max, safety banana plugs

989006000 - 1 Ω, 0.5%, 0.5A max, safety banana plugs

989007000 - 50 Ω, 0.5%, 0.5A max, safety banana plugs

207030301 - 0.01 Ω, 0.5%, 30A max, leads and cable lug

207030500 - 0.01 Ω, 0.5%, 50A max, leads and cable lug

982105000 - Carrying case for 8210/8211

902001000 - Carrying case for DAS 20/40

Specifications subject to change without notice.

non contractual pictures. Sefram 2013