

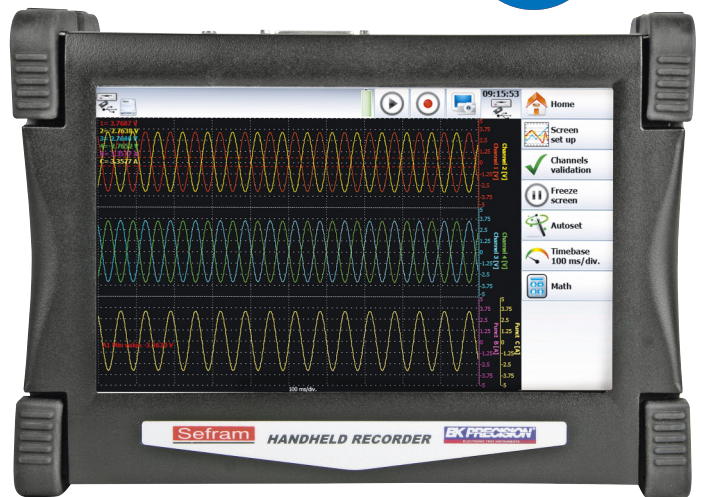
### Multifunction handheld recorders

#### Capabilities

- 2 to 4 analogue channels
- Universal input
- DC, AC+DC RMS voltage measurement
- Frequency, counter
- Temperature: thermocouple, Pt100/Pt1000\*
- Power analysis function
- 16 logical channels
- 14-bit resolution
- 10" TFT panoramic LCD touch screen
- 1 Ms/s sampling rate
- 100 kHz bandwidth
- 32 Gb internal hard disk
- 32 Mword memory
- Interfaces : 2 x USB, Ethernet,
- Lithium-ion battery
- Autonomy: up to 9,5 hours.
- 110mm Thermal printer module\*
- IEC 1010 CAT III 600V

\* factory option

**NEW**



**DAS 30/50**

#### Multifunction recorders for all your applications

The new DAS 30-50 series recorders have been designed to meet the requirements of all applications in industry (IEC 61010, CAT. III 600V). You can view your measurements (traces, digital values) and record directly in the internal memory or into a USB memory stick. Using Sefram software, you can transfer easily your records on a computer.

#### Easy-to-use

Thanks to the new user interface combined with its large touch screen LCD, the portable DAS recorders are design for ease of use for a wide range of data recording applications and easy transfer of your records.

#### Universal input

The new DAS 30-50 DAS 30 & DAS 50 recorders offer universal input, which are convenient for all types of signals :

- voltage from 1mV to 1000V DC or 425Vrms
- temperature (thermocouples) and Pt100/Pt1000\*
- counter, frequency
- current (with optional shunt)

#### Typical applications

The new DAS 30 & DAS50 recorders are general purpose and multifunction recorders and are suitable for many applications:

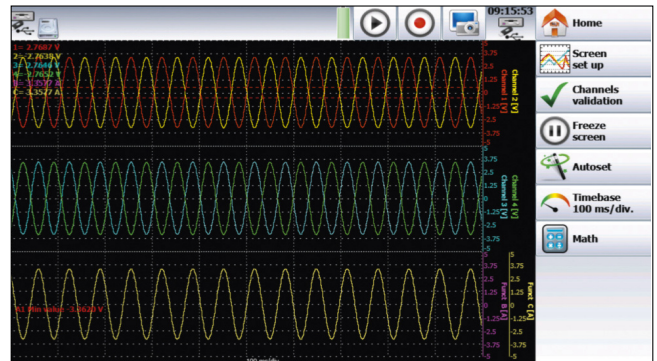
- maintenance/failure diagnostic on electrical systems
- voltage, current, temperature recording and monitoring
- power analysis for single phase, dual phase and three phase systems

#### Selection guide

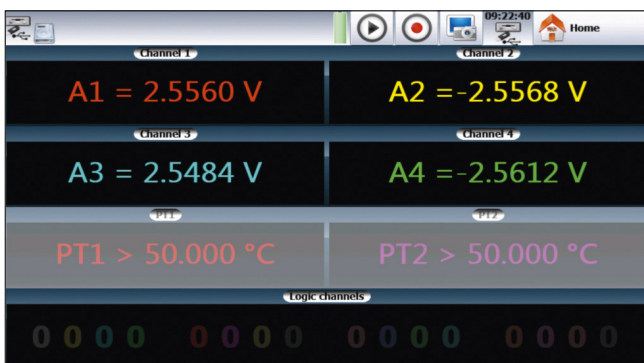
	DAS 30	DAS 50
2 isolated universal channels	•	
4 isolated universal channels		•
2 Pt100/Pt1000 input	factory option	factory option
110mm thermal printer	factory option	factory option

	A1	A2	A3	A4	PT1	PT2
Name	Channel 1	Channel 2	Channel 3	Channel 4	PT100 2 wires 0.00 Ω	PT100 2 wires 0.00 Ω
Type	Voltage direct	Voltage direct	Voltage direct	Voltage direct	PT100 2 wires 0.00 Ω	PT100 2 wires 0.00 Ω
Filter	Without filter	Without filter	Without filter	Without filter	10 Hz	10 Hz
Function	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Range	10 V	10 V	10 V	10 V	100°C	100°C
Center zero	0 V	0 V	0 V	0 V	0°C	0°C
Max.	5 V	5 V	5 V	5 V	50°C	50°C
Min.	-5 V	-5 V	-5 V	-5 V	-50°C	-50°C
Threshold T1	0.5 V	0.5 V	0.5 V	0.5 V	0.5°C	0.5°C
Threshold T2	-0.5 V	-0.5 V	-0.5 V	-0.5 V	-0.5°C	-0.5°C

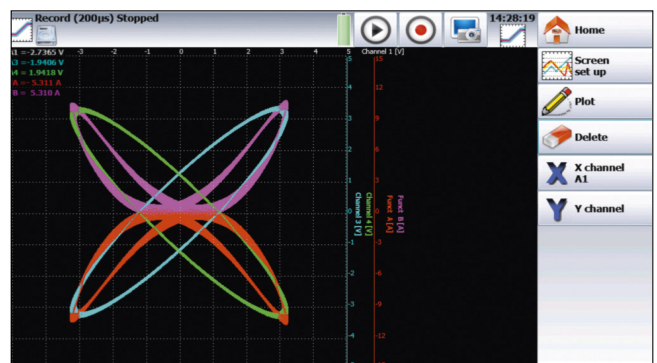
Channels setup: one screen with colors to differentiate channels



Oscilloscope mode



Digital display of measurements



XY mode

Trigger: several type of trigger, one channel, on a level, slope, several channels or combined conditions.

With the thermal printer module, you can setup your print

## Factory options

### 110mm thermal printer module

It's possible to install on Sefram DAS 30 & 50 recorders a thermal printer module (110 mm width, 10 meters thermal paper roll).

### Pt100/Pt1000 board

This factory option adds 2 channels dedicated to Pt100/Pt1000 platinum resistance measurements, with 2 wires or 3 wires or 4 wires setup.

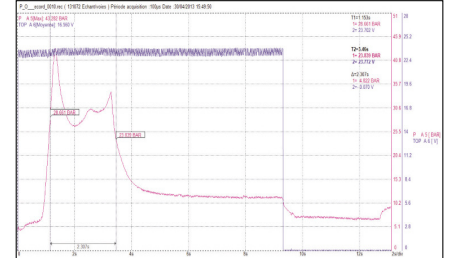
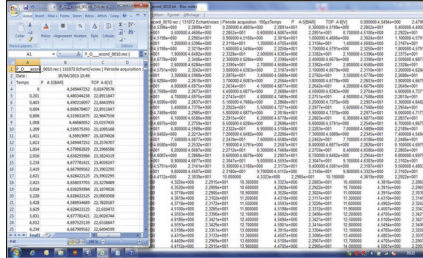
Using a 20 bit analog to digital converter, this card will provide an excellent accuracy and resolution for temperature measurement.

## 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

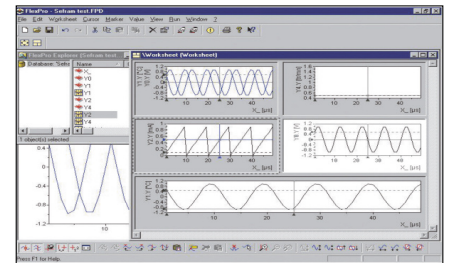
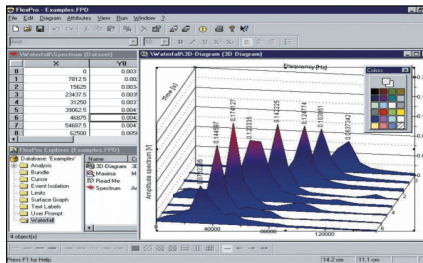
- Curve printing
- Display of values (text)
- Cursors and zoom
- File concatenation
- 8 math calculations
- Up to 120 characters text notes
- Bitmap, Excel®, txt, csv export
- Easy setup of curves display



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

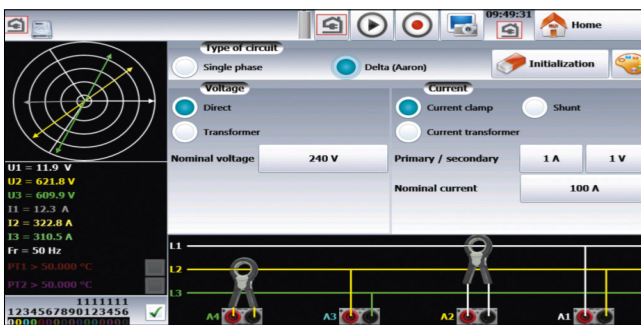
With Flexpro® :

- More than 100 functions of statistical and math analysis
- Powerful graphical display
- Measurement report editing

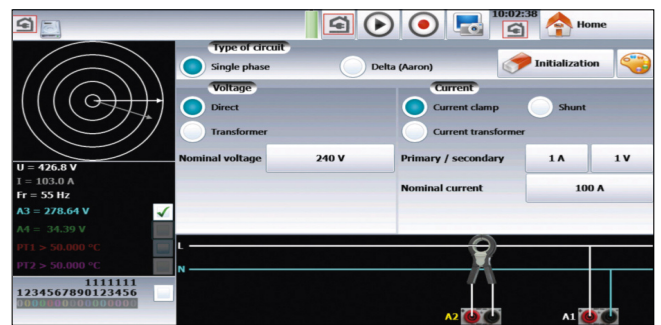


## ENERGY / POWER ANALYSIS

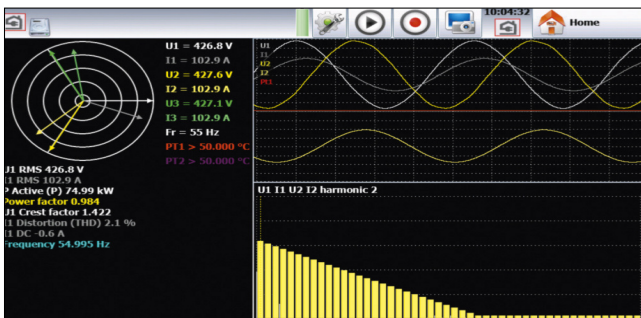
A very powerful analysis for single phase, dual phases or three phases networks. Analysis is provided with Fresnel diagram or oscilloscope mode.



Your instrument shows how to connect the inputs with a schematic and you can setup parameters and measurements on the same screen.



Example of a single phase network.



Real time display of signals and harmonics (up to rank 50)



Setup of parameters to measure or calculate.

## SPECIFICATIONS – UNIVERSAL INPUT

Number of channels :	2 (DAS30) or 4 (DAS50)
<b>VOLTAGE</b>	
Bandwidth :	100 kHz
DC voltage ranges :	1 mV à 1000 V
Maximum input voltage :	± 500 VDC or 440 VAC
Max offset :	± 5 ranges (up to ± 500 V)
Accuracy :	± 0,1% of range ; ± 10_V / ± 0,1% offset
TRMS AC+DC ranges :	from 200 mV to 424 V
Bandwidth (-3 dB) :	5 Hz - 500 Hz
Response time :	100 ms typical (40 ms to 50 Hz)
Crest factor :	2,2 and 600 V peak voltage

<b>FREQUENCY</b>	
Sensitivity :	100 mV rms min.
Duty cycle :	10% min.
Frequency range :	0.1 Hz to 100 kHz
Basic accuracy :	0,02% of full scale

<b>TEMPERATURE</b>	
<b>Sensor</b>	<b>Ranges</b>
Couple J	-210°C to 1200°C
Couple K	-250°C to 1370°C
Couple T	-200°C to 400°C
Couple S	-50°C to 1760°C
Couple B	200°C to 1820°C
Couple E	-250°C to 1000°C
Couple N	-250°C to 1300°C
Couple C	0°C to 2320°C
Couple L	-200°C to 900°C

Accuracy Cold junction compensation ±1,25°C

<b>POWER ANALYSIS FUNCTION</b>	
Networks :	Single phase, 2 phases, 3 phases
Display :	Fresnel diagram, oscilloscope, data
Measurements :	Mean value, RMS value, peak value, crest factor, THD and DF for voltages and currents, active, reactive and apparent power, power factor (cos φ) calculated up to rank 50, with display and record
Harmonics :	

<b>SAMPLING</b>	
Resolution :	14 bit
Sampling rate :	1M sample/sec per channel max.
Memory length :	32Mword in segments of up to 128 Blocks
Triggering :	Positive edge, negative edge, on logical input, delay, Go No Go
Pre trigger :	-100% to +100%

<b>BANDWIDTH</b>	
<b>Bandwidth (-3dB)</b>	
Range :	> 1 V : 100kHz
Range :	> 50mV : 50kHz
Range :	5 mV : 20kHz
Internal analogue filters :	10 kHz, 1 kHz, 100 Hz, 10 Hz.
Slope :	20 dB/decade
Programmable digital filters :	10 Hz, 1 Hz, 0,1 Hz, 0,01 Hz, 0,001 Hz
Slope :	40 dB/decade
Input impedance (DC) :	>25MΩ for range <1V 1 MΩ for upper ranges // 150pF typical
Maximum input voltage :	± 500VAC between one channel and the frame ground ± 500VAC
Between 2 terminals of one channel Isolation between frame ground and channel :	>100 MΩ at 500 VDC

<b>LOGIC INPUT</b>	
Channels :	16
TTL – Max voltage :	24V
Sampling rate :	The same sampling rate as analogue inputs.
Sensor supply :	9 to 15 V
Alarms 2 :	A & B 0-5 V output.

<b>PT100 / PT1000* INPUT</b>	
Number of channels :	2
Current :	1mA for Pt100 and 100µA for Pt1000
Resolution :	20 bits
Temperature range:	-200°C to +850°C
Measurements :	2, 3, 4 wires
Accuracy at 20°C :	±0,2°C



\* factory option

## PAPER PLOT CHARACTERISTICS\*

Paper width :	110 mm
Paper speed :	from 1 mm/min to 25mm/s
Paper speed in memory mode :	10 mm/s max.
Resolution & accuracy : Y axis :	8 dots per mm
X axis :	16 dots per mm
XY mode :	8 dots per mm (both axis)
<b>Storage</b>	
Setup backup :	unlimited on the hard disk
Internal hard disk :	32 Gb (solid state)

## GENERAL SPECIFICATIONS

Display :	10 inches TFT LCD coloured touch screen F(t)and XY functions. Zoom, cursors, dV, dT and zoom between cursors. Calculation functions y=ax+b, y=/x/+b, y=a√x+b+c, y=ax <sup>2</sup> +b, y=(log x)+b, y=ae(x+b)+c
Automatic measurements :	20 automatic measurements ( F, T, Vpp, Tm...)
Interfaces :	2 x USB port, Ethernet
Power supply :	100 to 240 VAC, output 15 V 5A max.
Battery (factory installed) :	Lithium ion 10,8 V, 6,5 Ah.
Autonomy :	Typically 9h30mn after a complete charge 4 hours without screen saver
Charging time:	1 hour (recorder off) Complete charge in 4 hours.
Dimensions & weight :	295 x 210 x 105, 2,5 Kg
Operating temperature range :	0°C to 40°C
Max. RH. :	80% without condensation.
Storage temperature range :	-20°C to 60°C
Warranty :	2 years
Safety :	IEC 61010 - CAT III 600V

## OPTIONNAL ACCESSORIES

### Accessory clamps

- SP 201** - 200 AAC, 10mV/1A, ø 15 mm.
- SP 221** - 100 AAC, 100mV/1A, ø 15 mm.
- SP 230** - 1200 AAC, 10mV/1A, ø 50 mm.
- SP 261** - 1200 AAC+DC, 1mV/1A, ø 50 mm.
- SP 270** - 2000 AAC, 1 mV/1A, ø 70 mm.
- A 1287** - 3000 AAC, 0,333 mV/A, ø 150 mm / Flex



### Shunts

#### Shunts (with banana plugs)

- 910007100** Shunt CA 0.01 ohm : 3 A
- 910007200** Shunt CA 0.1 ohm : 1 A
- 989007000** Shunt CA 50 ohm : 0.05 A
- 989006000** Shunt CC 1 ohm : 0.5 A
- 912008000** Shunt CA 10 ohm : 0.15 A



#### Shunts (with wires)

- 207030301** Shunt 0.01 ohm : 30 A max
- 207030500** Shunt 0.001 ohm : 50 A max

### Logical channels.

- 984405500** 16 isolated logical channels interface
- 984405000** 16 channels logic probe.



### Rugged carrying case

- 903001000** Rugged carrying case



### FLEXPRO software

- 910008100** FLEXPRO - VIEW
- 910008200** FLEXPRO - FULL

### Printer module (factory option)

- 903002000** Thermal printer module



### Consumables

- 837500526** Thermal paper roll (10m)

### Pt100/Pt1000 (factory option)

- 903003000** 2 channels Pt100/Pt1000

### 19" rackmount kit

- 903004000** Rackmount kit



Supplied with : a carrying case, a set of red and black cable + alligator clip + quick banana plug, main adaptor, manual (CD-ROM).



FT SEFRAM DAS 30/50 A 01 - Specifications can be updated without notice

## For assistance and ordering

# Sefram



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