

## SEFRAM DAS30 / DAS50 / DAS60

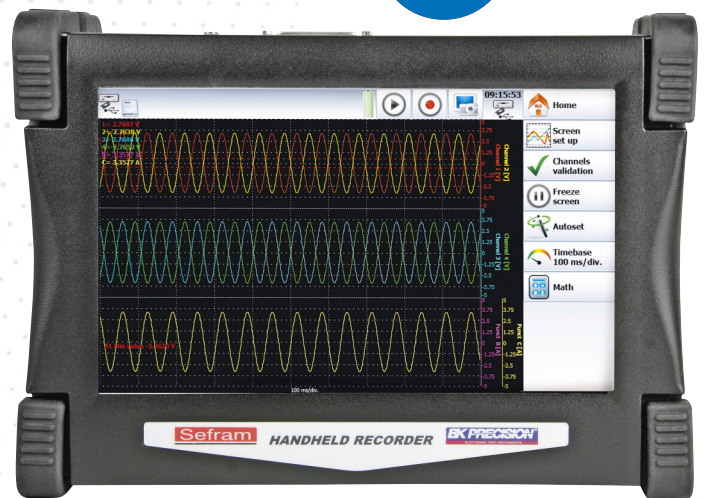
### Handheld Data Acquisition Solution



#### Capabilities :

- 2 to 6 analogue channels
- Universal input
- DC, AC+DC RMS voltage measurement
- Frequency, counter
- Temperature: thermocouple, Pt100/Pt1000\*
- Power analysis function (up to 400Hz for DAS60)
- 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 (64GB for DAS60)
- 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 options: - printer module (all models)  
- Pt100 / Pt1000 (DAS30/50)



DAS30 / 50 / 60

#### Multifunction recorders for all your applications

The new DAS30 / 50 / 60 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 DAS30 / 50 / 60 recorders offer universal input, which are convenient for all types of signals :

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

#### Typical applications

The new DAS30 / 50 / 60 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 and three-phase systems

#### Selection guide

	DAS30	DAS50	DAS60
2 isolated universal channels	●		
4 isolated universal channels		●	
6 isolated universal channels			●
Memory	32GB	32GB	64GB
2 Pt100/Pt1000 input	factory option	factory option	●
110mm thermal printer	factory option	factory option	factory option



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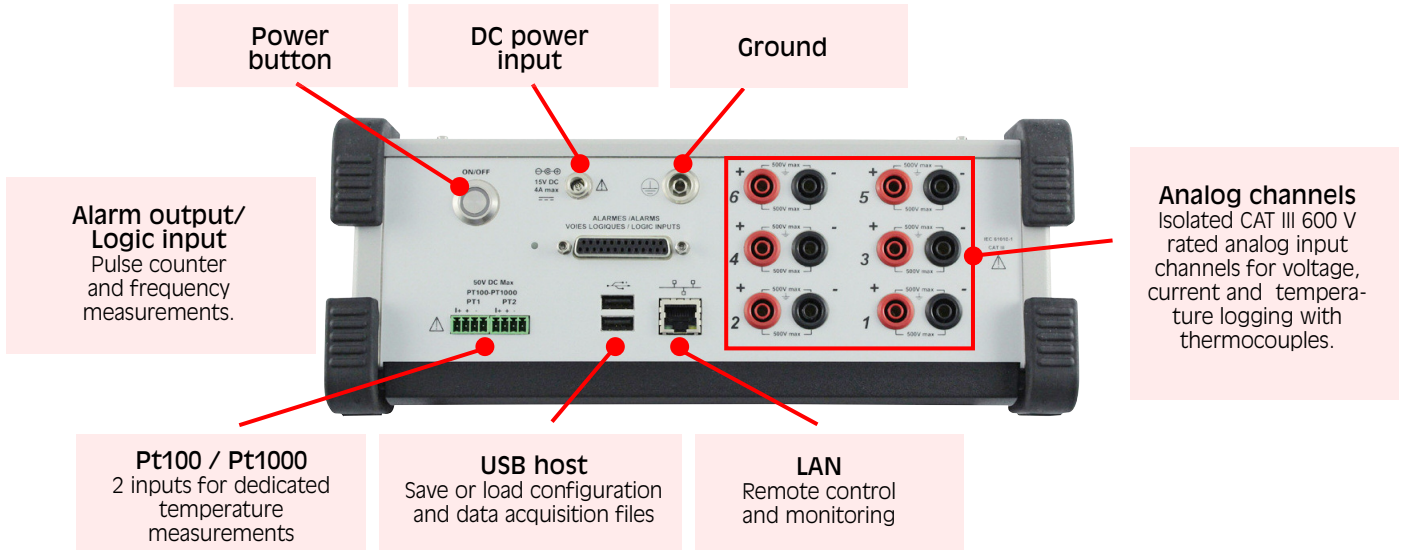
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# SEFRAM DAS30/DAS50/DAS60

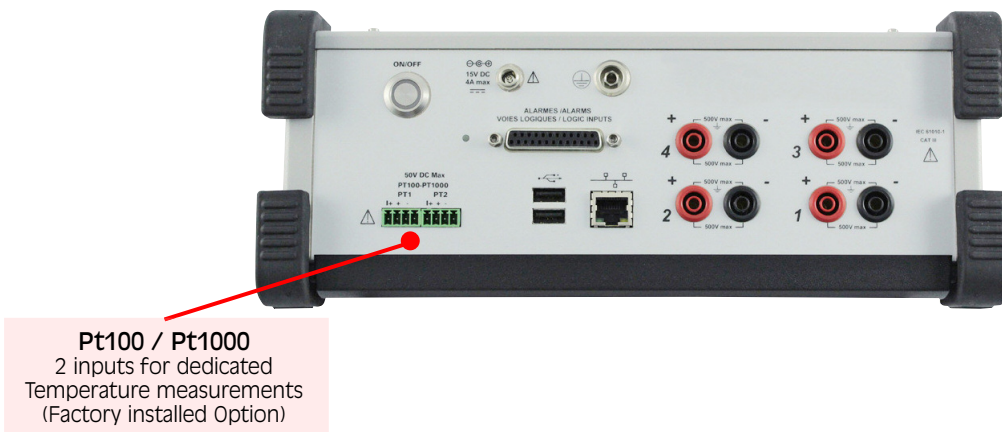
Sefram

Handheld Data Acquisition Solution

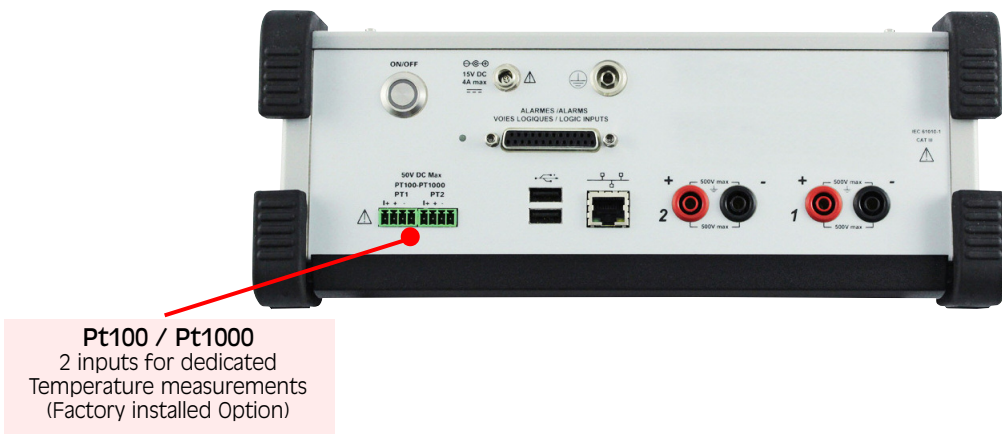
## DAS60



## DAS50



## DAS30

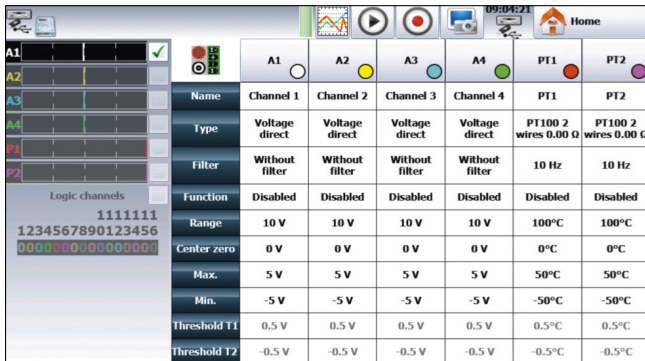


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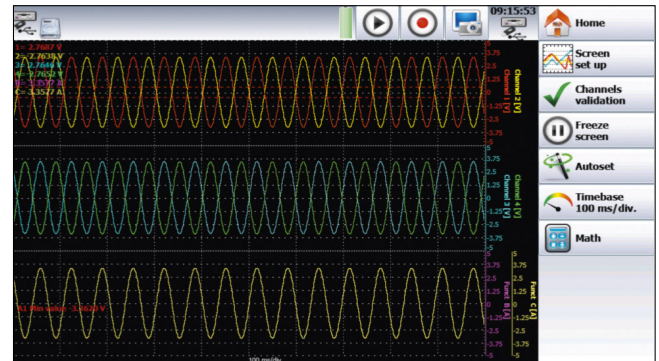


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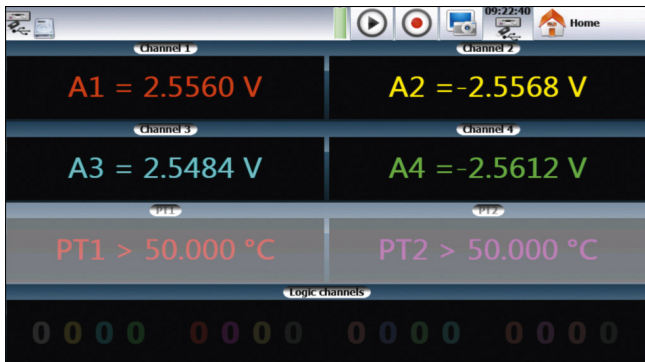
## Handheld Data Acquisition Solution



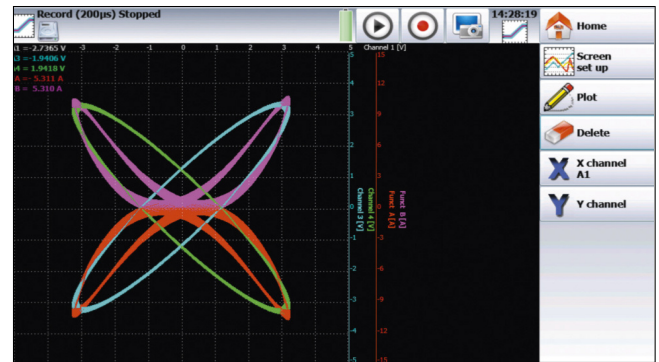
Channels setup: one screen with colors to differentiate channels



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 set up your print

### Factory options :

#### 110mm thermal printer module

It's possible to install on Sefram DAS30 / 50 / 60 recorders a thermal printer module (110 mm width, 10 meters thermal paper roll).

#### Pt100/ Pt1000 board

This board is included in the DAS60 and is a factory option for DAS30 / 50. It adds 2 channels dedicated to Pt100/Pt1000 platinum resistance measurements, with 2 wires, 3 wires setup. Using a 20 bit analog to digital converter, this card will provide an excellent accuracy and resolution for temperature measurement.



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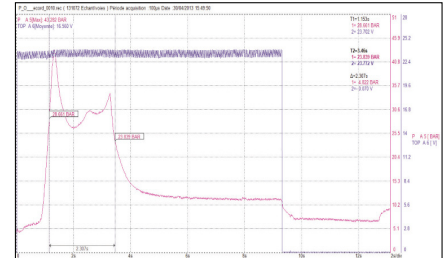
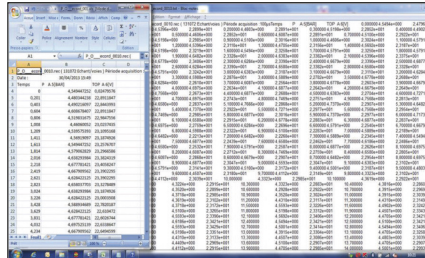
## Handheld Data Acquisition Solution

### 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 :

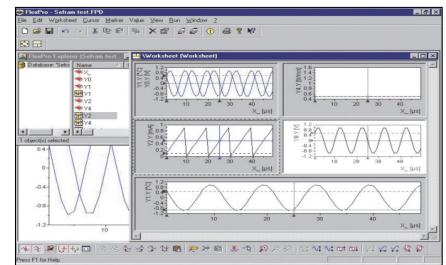
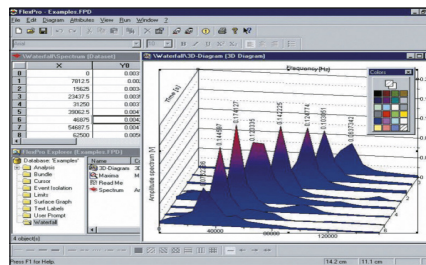
- Curve printing
- Display of values (text)
- Cursors and zoom
- File concatenation
- 8 math calculations
- Up to 120 characters text notes
- Bitmap, Excel®, txt, csv export
- Easy setup of curves display



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

With Flexpro® :

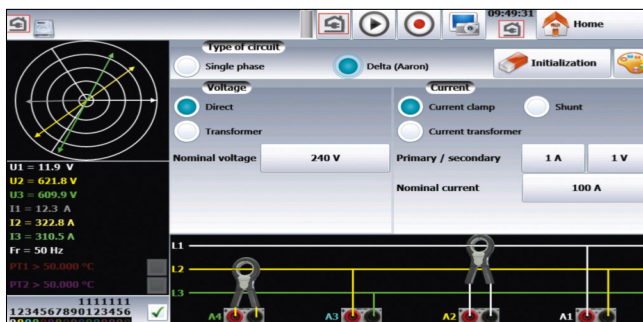
- More than 100 functions of statistical and math analysis
- Powerful graphical display
- Measurement report editing



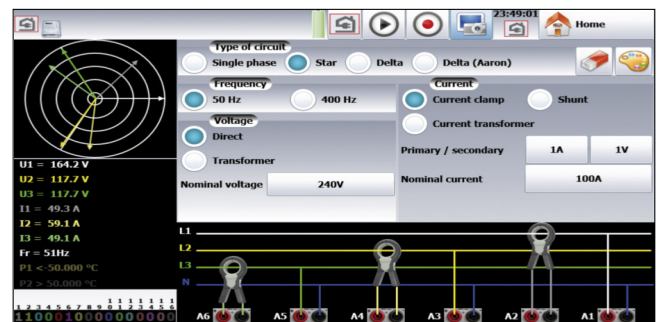
### ENERGY / POWER ANALYSIS

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

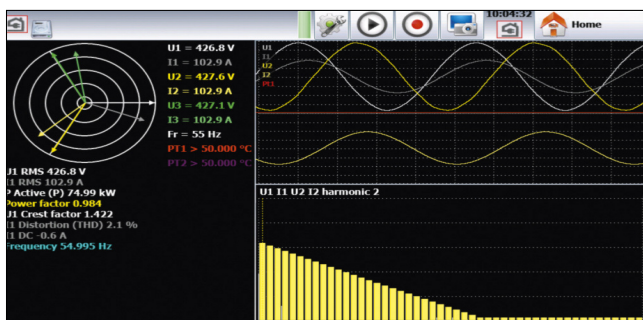
The DAS60 can work with 400Hz networks and has a trigger selection function.



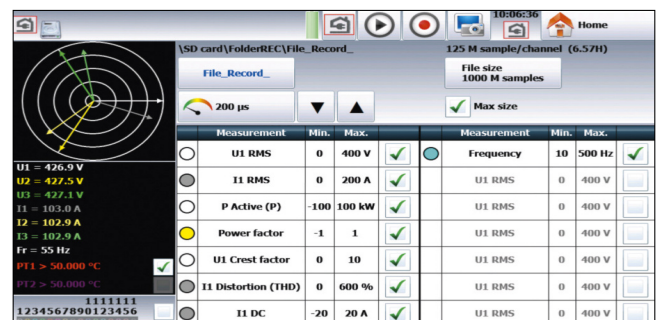
Your instrument shows how to connect the inputs with a schematic and you can setup parameters and measurements on the same screen.



Example of a three-phase network.



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



Setup of parameters to measure or calculate.



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## Handheld Data Acquisition Solution

### SPECIFICATIONS – UNIVERSAL INPUT

Number of channels : 2 (DAS30), 4 (DAS50), 6 (DAS60)

#### VOLTAGE

Bandwidth : 100 kHz  
 DC voltage ranges : 1 mV to 1000 V  
 Maximum input voltage :  $\pm 500$  VDC or 440 VAC  
 Max offset :  $\pm 5$  ranges (up to  $\pm 500$  V)  
 Accuracy :  $\pm 0,1\%$  of range ;  $\pm 10\mu\text{V}$  /  $\pm 0,1\%$  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

#### FREQUENCY

Sensitivity : 100 mV rms min.  
 Duty cycle : 10% min.  
 Frequency range : 0,1 Hz to 100 kHz  
 Basic accuracy : 0,02% of full scale

#### TEMPERATURE

##### Sensor Ranges

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  $\pm 1,25^\circ\text{C}$

#### POWER ANALYSIS FUNCTION

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 ( $\cos \phi$ )  
 Harmonics : calculated up to rank 50, with display and record

#### SAMPLING

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%

#### BANDWIDTH

##### Bandwidth (-3dB)

Range :  $> 1$  V : 100kHz  
 Range :  $> 50$ mV : 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) :  $> 25\text{M}\Omega$  for range  $< 1\text{V}$   
 1  $\text{M}\Omega$  for upper ranges // 150pF typical  
 Maximum input voltage :  $\pm 500$ VAC between one channel and the frame ground  
 $\pm 500$ VAC  
 Between 2 terminals of one channel  
 Isolation between frame ground and channel :  $> 100$   $\text{M}\Omega$  at 500 VDC

#### LOGIC INPUT

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.

#### PT100 / PT1000\* INPUT (factory option for DAS30 / DAS50)

Number of channels : 2  
 Current : 1mA for Pt100 and 100 $\mu\text{A}$  for Pt1000  
 Resolution : 20 bits  
 Temperature range : -200°C to +850°C  
 Measurements : 2, 3 wires  
 Accuracy at 20°C :  $\pm 0,2^\circ\text{C}$

#### PAPER PLOT CHARACTERISTICS (factory option for all models)

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)

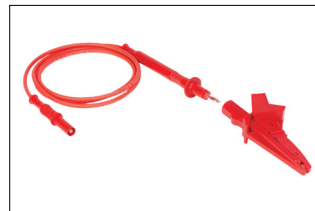
#### Storage

Setup backup : unlimited on the hard disk  
 Internal hard disk : 32 GB (solid state) for DAS30 / 50 and 64GB for DAS60

#### 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  
 $y=ax+b$ ,  $y=/x/+b$ ,  $y=a\sqrt{x}+b+c$ ,  
 $y=ax^2+b$ ,  $y=(\log x)+b$ ,  $yae(x+b)+c$   
 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 9h30min 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 mm, 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

#### SUPPLIED WITH :



One set of CAT III sheathed banana cables with alligator clips per channel and One set of bare wire to banana adapters per channel



Rugged carrying case

**Also included :** AC mains adapter 100 / 240 V, 25 pin male connector and backshell, soft wipe, stylus, roll of thermal printer paper (if printer option).

## Handheld Data Acquisition Solution

### ■ Options and Consumables

#### ■ Printer module (factory option)

903002000 : Thermal printer module for DAS30/50

906003000 : Thermal printer module for DAS60

#### ■ Pt100/Pt1000 (factory option for DAS30 / 50)

903003000 : 2 channels Pt100/Pt1000

#### ■ 19" rackmount kit



903004000 : Rackmount kit for DAS30/50



906001000 : Rackmount kit for DAS60

#### ■ Consumables



837500526 : Thermal paper roll (10m)

## Handheld Data Acquisition Solution

### ■ Optionnal accessories

#### ■ Accessory clamps:



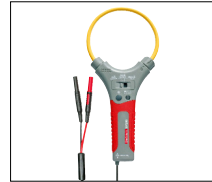
SP201 : 200 AAC, 10mV/1A,  
ø 15 mm.



SP261 : 2000 AAC, 1 mV/1A,  
ø 70 mm



SP221 : 100 AAC, 100mV/1A,  
ø 15 mm



SP295 : 3000 AAC, ø 10 mm



SP230 : 1200 AAC, 10mV/1A,  
ø 50 mm



SP296 : 3000 AAC, ø 18 mm

#### ■ Shunts :



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



207030301 Shunt 0.01 ohm : 30 A max

#### ■ Logical channels :



984405500 16 isolated logical  
channels interface



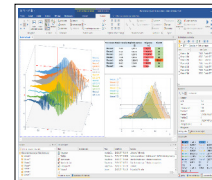
902407000 channels logic probe

#### ■ Rugged carrying case :



903001000 : Rugged carrying case  
for DAS30/50  
906002000 : Rugged carrying case  
for DAS60

#### ■ FLEXPRO software :



916002100 : Licence FlexPro View  
916002200 : Licence FlexPro Standard  
916002300 : Licence FlexPro  
Professional  
916002400 : Licence FlexPro  
Developer Suite

For assistance and ordering

