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Sefram
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SEFRAM DAS 20/DAS 40

- 2 to 4 analogue channels
- Universal input
- DC, AC+DC RMS voltage measurement
- Frequency, Thermocouple
- Power analysis function
- 16 logical channels
- 14-bit resolution
- 7" TFT LCD screen
- 1 Ms/s sampling rate
- 100 kHz bandwidth
- 8 GB internal hard disk
- 32 Mword memory
- Interfaces : USB, Ethernet,
- Lithium-ion battery
- Autonomy 10 hours.
- IEC 1010 CAT III 600V
- Printer mode* : 110 mm paper width

*Factory option.



DAS 20/40

DAS 20 & 40 multifunction recorders

The new DAS 20-40 series offer direct record on the internal hard disk, with 100kHz rate and 4 channels simultaneously. USB ports are provided for external memory devices (USB memory,...).

Thanks to the new user interface under Windows CE™, its large LCD TFT screen 7", the portable DAS recorders are design for ease of use for a wide range of data recording applications and easy transfer of your records.

Selection Guide :

	DAS 20	DAS 40
2 universal analogue channels	●	
4 universal analogue channels		●
Printer mode 110 mm paper width	Factory option*	Factory option*

*Please specify when you place your order.

Universal Inputs :

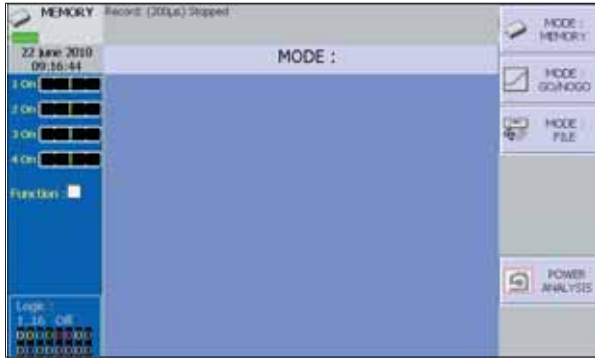
Bandwidth	100 kHz
Sampling rate	1 Ms /s
Voltage	-500 V / + 500 V 425 V RMS
Temperature	Thermocouple
Counter	From 10 Hz to 100 kHz
Current	AC+DC current (with external shunt or clamp)
Logical channels	16 logical channels 2 alarms output 0-5 V



Sefram
INSTRUMENTS & SYSTEMES

EASY TO USE PRODUCTS

Configure your recorder in few steps :



Select the channels used for the data acquisition.



Setup triggering parameters of the acquisition on paper, in internal memory or on file according to the current operating MODE.



1

Select the operating mode of the recorder.

2

Access to the parameters of each channel, access to the functions between channels.

Or let the autoset do the job !

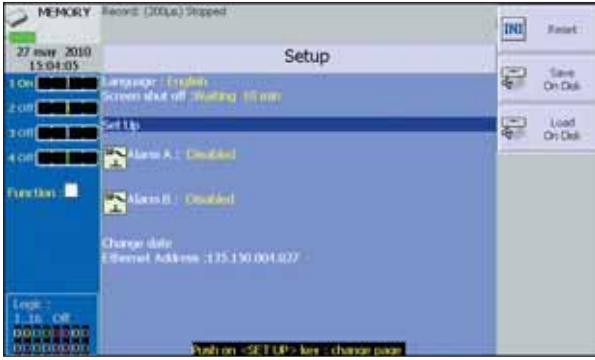
3

As an oscilloscope, the recorder displays the signal on the screen with numeric values.

4



5



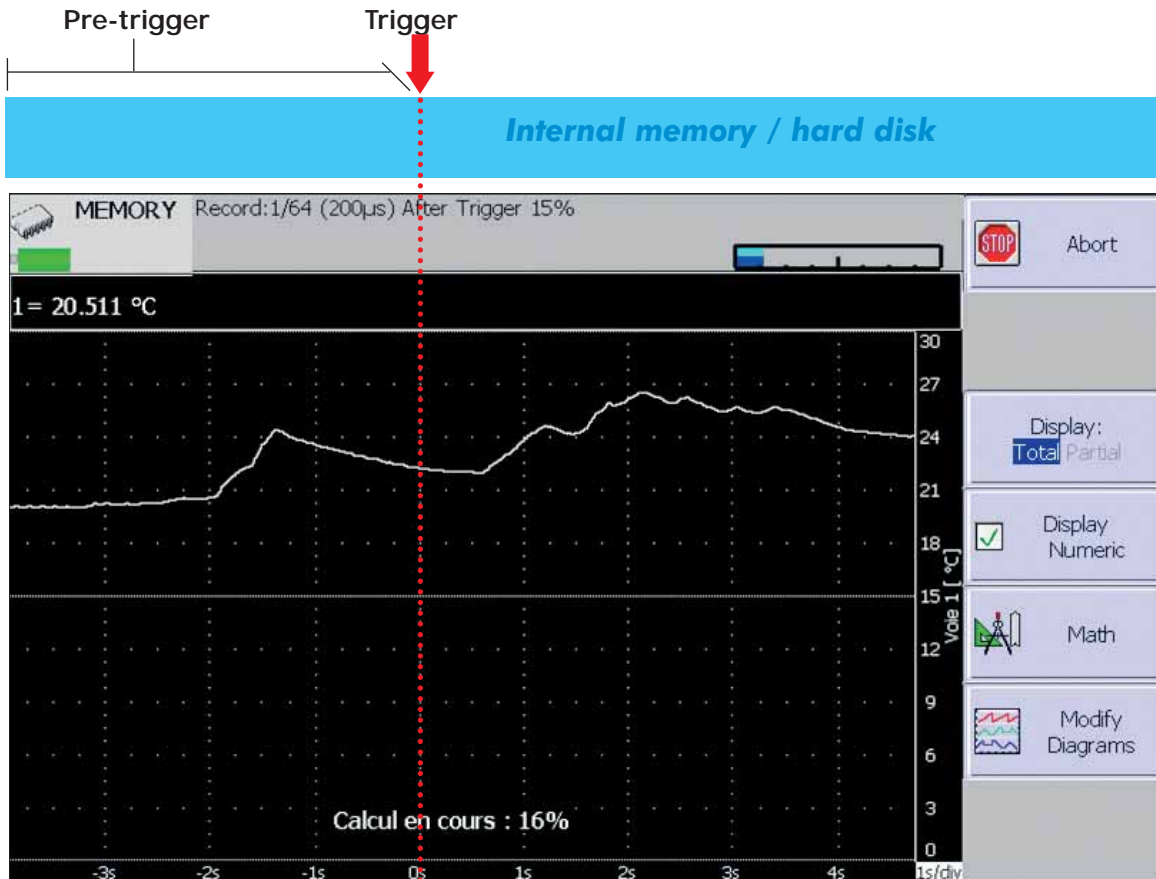
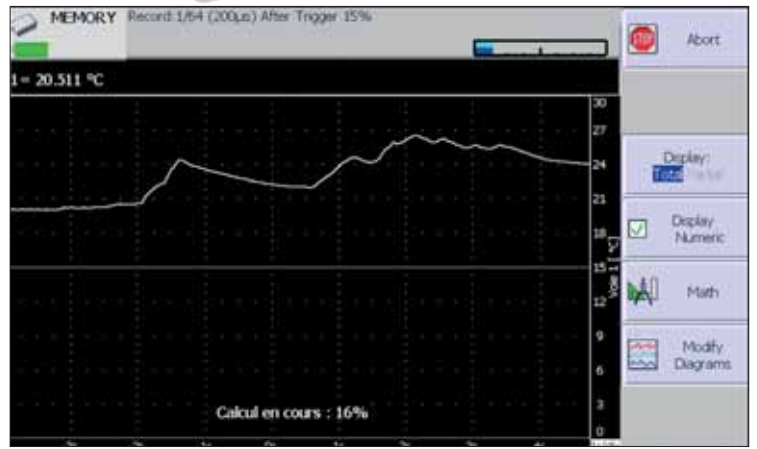
4 acquisition channels on battery... for 10 hours !*

*without printer mode

RECORD !



You can save your data on 8 GB hard disk or on 32 Mword memory for fastest acquisition.





8

Replay your acquisition files or export your data for other applications.

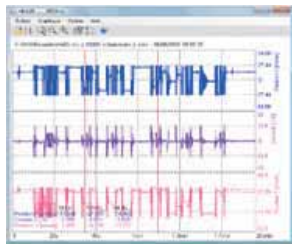
Sefram DAS 20 & DAS 40 recorder's are equipped with a bright 7" TFT LCD screen. User can setup and view the data in the most easy and convenient way.



EXTERNAL PC SOFTWARE

Display data recorded and export

Control the recorder through Ethernet interface



Sefram Viewer



Sefram Pilot



Excel©

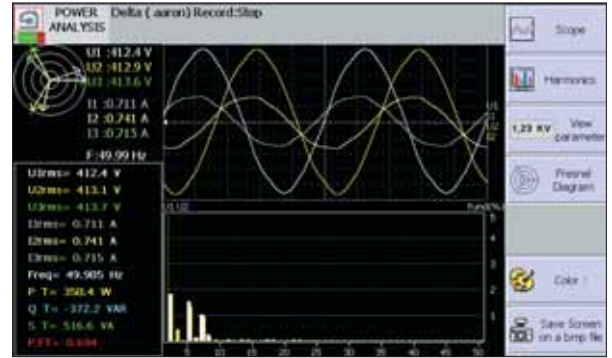
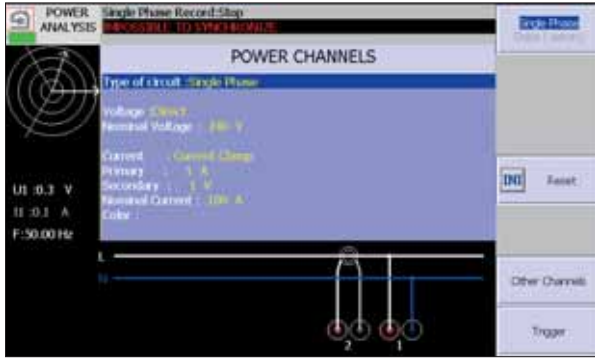
Text file

BMP©

POWER ANALYSIS FUNCTION

It makes possible to measure power and harmonics. Measured values can be tracked in real time or recorded.

Connect your application with the schematic provided :



Fresnel diagram - Oscilloscope mode - Display values and harmonics



FACTORY OPTIONS

Optional printer mode

It's possible to install on Sefram DAS 20 & 40 recorders a thermal printer module (110 mm width, 10 meters thermal paper roll).



Optional temperature measurement module (Pt100 and Pt1000)

2 input for PT100 & PT1000 (available in October 2010).

SPECIFICATIONS – UNIVERSAL INPUT

Number of channels :	2 (DAS20) or 4 (DAS40)
VOLTAGE	
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 :	to 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
PT100 (2 or 4 wires)*	-200°C to 850 °C
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 to 2320°C
Couple L	-200°C to 900°C
Accuracy	Cold junction compensation ±1,25°C

*Factory option

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 φ)
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 :	> 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 :	Between one channel and the frame ground ± 500VAC Between 2 terminals of one channel ± 500VAC
Isolation between frame ground and channel :	>100 MΩ at 500 VDC

LOGIC INPUT

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



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)

GENERAL SPECIFICATIONS

Display :	TFT LCD coloured screen 7 inches ; f(t) and XY functions.
Zoom, cursors, dV, dT and zoom between cursors.	
Calculation functions :	y=ax+b , y=x/+b, y=av/x+b+c, y=ax2+b, y=(log x)+b, yae(x+b)+c 20 automatic measurement s (F, T, Vpp, Tm.....)
Automatic measurements :	

STORAGE

Setup backup :	unlimited on the hard disk
Internal hard disk :	8 Gb.
Interfaces :	1 USB port, Ethernet
Power supply :	100 to 240 VAC, output 15 V 5A max.
Battery (factory install) :	Lithium ion 10,8 V, 6,5 Ah.
Autonomy :	Typically 10 hours after a complete load. 2 hours 30 minutes after a quick load of 1 hour (recorder off) Complete load in 4 hours. 10 Watts without print, 40 w max.
Max. consumption :	265 x 185 x 85, 2 Kg
Dimensions & weight :	0°C à 40°C
Operating temperature range :	80% without condensation.
Max. RH. :	-20°C à 60°C
Storage temperature range :	1 year
Warranty :	CEI 1010 CAT III, 600V
Safety :	

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.
984405000 16 channels logic probe.

Rugged carrying case

982001000

FLEXPRO software

910008100 FLEXPRO 7 - VIEW
910008200 FLEXPRO 7 - FULL

Printer option (factory option)

902002000

Consumables

837500826 Thermal paper roll (10m)



Supplied with : One carrying pouch, a set of red and black accessory per channel (test lead, alligator clip, banana plug)



FT SEFRAM DAS 20/40 A00 - Specifications can be updated without notice



32, rue Edouard Martel • B.P. 55 • 42009 - St Etienne cedex 2



Fax. +33 (0)4.77.57.23.23

Web : www.sefram.fr • e-mail : sales@sefram.fr

For assistance and ordering