Sefram

DAS 1000

One compact and paper-less recorder does it all

The new SEFRAM recorder is a unique combination of a high performance recorder and a power and energy analyzer. Its powerful acquisition and analysis capabilities help you to quickly identify any kind of problem. You get all the advantages of separate instruments in a single compact unit.

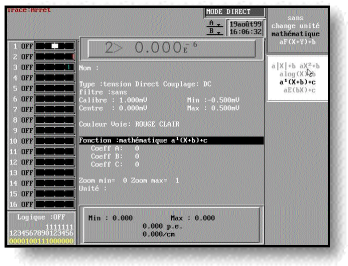
A new type of recorder :

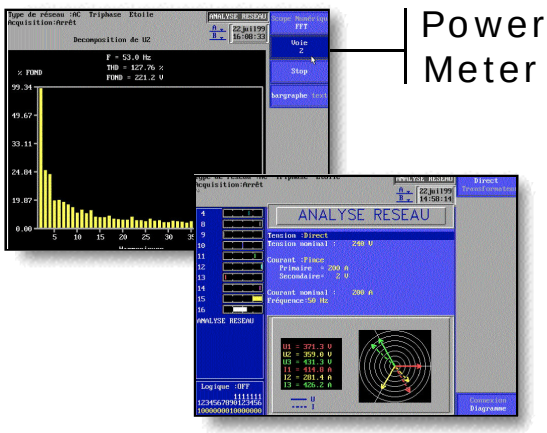
- 4, 8, 12 or 16 channels and 16 logical channels
- Universal inputs : VDC/AC$_{RMS}$*, Current*, Thermocouples and Pt 100 sensors
- Power, Energy and Harmonics Analysis functions
- Bandwidth : 30 kHz
- Resolution : 14 bits
- Max. sampling frequency: 250 kS/s per channel
- High visibility waveforms displayed on a 10"4 color TFT LCD screen
- Calculation functions and mathematical combinations of channels
- Massive storage capacity (built-in SuperDisk™ 120MB disk drive, hard disk up to 10 GB*)
- ETHERNET* interface for direct connection to your network
- Built-in RS 232 Interface
- Paper on demand via the Centronics interface
- IEC 1010, CAT.III, 600 V)
- Supplied with Flex.Pro software (Windows™ compatible)

* option

A state-of-the-art recorder,

it features 4, 8, 12 or 16 multi-range measurement channels, plus 16 logical inputs. With a 30 kHz bandwidth and a 14 bits resolution, the DAS 1000 is an excellent solution to capture transient. Its large capacity memory allows long term recording of high speed data and off-line data processing on a computer. The Ethernet* interface allows you to connect and control your instrument from your PC.





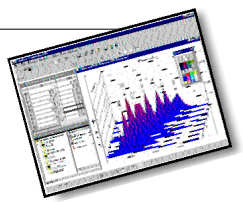
Power, Energy & Harmonics Meter & Analyzer,

all in a compact and rugged instrument. You can measure, record and analyze Energy, Power and Harmonics parameters in single-, split- or 3-phase systems (AC and DC). The DAS 1000 is the perfect tool to maintain electrical power systems, troubleshoot power distortions and diagnose problems.

IEC 1010, CAT.III, 600 V

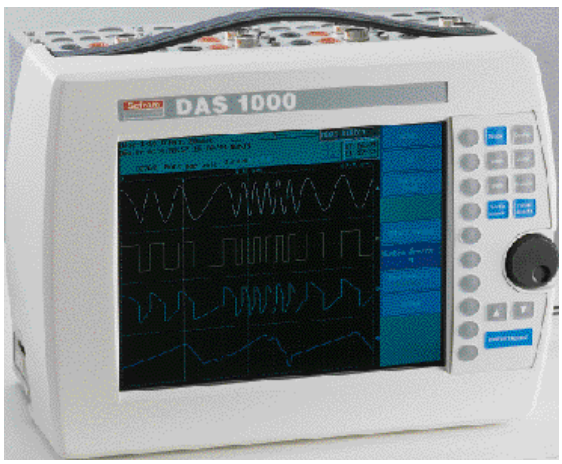
Flex.Pro

A powerful software for the analysis of your data for Windows™



The basic version of Flex.Pro software is supplied with the DAS 1000. It allows you to import and publish your data in documents.
The complete version of Flex.Pro software* offers you everything you expect for a sophisticated analysis, thanks to powerful features:

- ➲ data importation from several sources
- ➲ file organisation by the Flex.Pro file manager
- ➲ data analysis with multiple mathematical functions
- ➲ graphical data displays in 2 or 3 dimensions, as tables or text
- ➲ use of cursors
- ➲ data export for insertion in word processor documents



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DAS 1000

General Specifications

Channels : 4, 8, 12 or 16 - **Logic channels :** 16

Meas. :

- VDC ranges : 1 mV to 1000 V
max. drift : ± 5 ranges (except 1000 V)
accuracy : ± 0.1% ± 5 µV + 0.15% of offset

- VAC$_{RMS}$* Ranges : 200 mV to 500 V
Bandwidth (-3 dB): 5 Hz to 25 kHz
Crest factor : 10 (for range < 5V)

- Temperatures (Cold junction compensation accuracy : ± 1 °C)
Pt100 (2,3, 4 wire) and thermocouples (J, K, T, S, B, E, N & W5)

Power, Energy and Harmonics analysis functions

All Power, Energy and Harmonics functions are specified for AC/DC Single-, Split-or 3-phase systems (Wye & Delta) with a fundamental frequency from 45 to 65 Hz.

Displayed parameters : current values, Min., Max., Ave.
(integration period : 1 s to 1 h)

Voltage RMS, Ave., Peak, Crest Factor, Total Harmonic Distortion (THD) and Distortion Factor (DF)
Range : 0 to 400 V$_{RMS}$ max. (autoranging)
Accuracy (RMS, Ave., Peak, Crest factor,) : 0.5 %
Accuracy (THD & DF) : 2.5 %

Current RMS, Ave., Peak, Crest factor, Total Harmonic Distortion (THD) and Distortion Factor (DF)
with accessories (shunts, current transducers, current transformers)

Harmonics (V and I)
up to 50th harmonics
Accuracy : 1.5 %

Power Active (P), Reactive (Q), Apparent (S), Power Correction (Qc)
Accuracy : 1%
Power Factor (cos. phi) : accuracy 0.2 %

Freq. Accuracy : 0.1%

Energy Active, Reactive and Apparent
Power Analysis, Energy Cost calculation.
Integration period : 1 s to 1h

Sampling

Resolution : 14 bits
Sampling rate : max.: . 250 kS/s per channel and min. : 10 min.
Memory length: 2 MB segmentable in up to 128 blocks (16 MB* optional)
Triggering : positive or negative edge, window, slope (16 triggers)

Bandwidth

Analog inputs: 30 kHz (range > 500 mV) and 4 kHz (range < 500 mV)
Programmable filters: 1/10 kHz, 1/ 10/ 100 Hz, 10 s., 1/ 10 min.
Input impedance (DC): >25 MΩ (from 1 mV to 2 V); 2 MΩ (range> 2 V)
Max. Volt. inputs : - between 1 channel and the inst. ground: ± 500 V
- between 2 inputs of 1 channel : ± 500 V
Common mode rejection : >140 dB

Logic Inputs

Channels : 16 floating (50 V) - **Input impedance :** 300 kΩ
TTL level - Maximum input : ± 7,5 V
Available functions : - triggering of one acquisition, alarm
- triggering on logical words
- acquisition in memory mode

Printing

External A4 printer (200 mm) (PCL compatible)
Writing options :
- 7 pre-programmed grids
- user programable formats
- entry of channel names, instantaneous values, recording name, ranges, date, relative or real time

Display

Back lit 10.4in. color TFT LCD screen
- f(t) and X-Y format, text
- memory mode display
- zoom, cursors, ΔV, Δt, zoom between cursors

Calculation functions : change of unit, y = a[x] + b, y =ax^2 + b, y = a√(x + b) + c, y = a logx + b, y = a$E^{(cx)}$ + b
Mathematical functions between channels : +, -, ÷, x
Configuration backup : 15 named set-ups
Alarm outputs : on 2 relays
Data storage : removable 120 MB LS-120 disk (optional 4 or 10 GB removable hard disk)
Interfaces : RS 232C, Centronics, Ethernet RJ 45
Supply: 90 to 264 VAC (without selection), 47 to 63 Hz, 140 to 370 VDC
Power consumption : 100 W max.
EMC **:** EN 50082-2 industrial environment
Dimensions & Weight : 259 x 344 x 195 mm; 7.5 kg

Ordering Information

Supplied with : 2 banana plugs per input,1 DIN Pt100 sensor per input, 1 RS 232 connector and a basic Flex.Pro software

DAS1000/4 - DAS 1000 Recorder/ 4 channels
DAS1000/8 - DAS 1000 Recorder/ 8 channels
DAS1000/12 - DAS 1000 Recorder/ 12 channels
DAS1000/16 - DAS 1000 Recorder/ 16 channels

*** Options (when ordering)**
84162 - VAC RMS (200 mV à 500 V)
84165 - 16 Mword memory extension
10004 - Ethernet
10002 - 4.3 GB Hard disk
10001 - 10 GB Hard disk
10003 - Rack Mounting

✓ Accessories
100082 - Complete Flex.Pro Software
100091 - LS 120 drive for PC (internal- IDE Bus)
100092 - LS 120 drive for PC (external- parallel port)
10005 - Carrying case
10006 - Protective cover
100093 - Keyboard
100094 - Mouse
100095 - External 12V converter

Accessories dedicated to Energy and Power Analysis :
ELD.1057 - Connection Kit for Energy Analysis
Contains: 10 stackable banana plug test leads (3 m); 1 stackable banana plug test lead (25 cm); 5 alligator clips.; 4 grabbers (alligator clips connection); 2 test tipss and a carrying bag
910007100 - Shunt (0.01 Ω, 1 %, 10 Amax., safety banana plugs)
910007200 - Shunt (0.1 Ω, 1 %, 3 Amax., safety banana plugs)
989006000 - Shunt (1 Ω, 0.1 %, 0,5 Amax., safety banana plugs)
989007000 - Shunt (50 Ω, 0.5 %, 0,5 Amax., safety banana plugs)
207030301 - Shunt (0.01 Ω, 0,5 %, 30 Amax., fils et cosses)
207030500 - Shunt (0.001 Ω, 0,5 %, 50 Amax., fils et cosses)
SP 201 - AC current transducer (200 A, 10 mV/ 1 A, Ø 15 mm)
SP 221 - AC current transducer (10 A, 100 mV/ 1 A, Ø 15 mm)
SP 230 - AC current transducer (1200 A, 1 mV/ 1 A, Ø 50 mm)
SP 270 - AC current transducer (2000 A, 1 mV/ 1 A, Ø 70 mm)
SP 271 - AC current transducer (3000 A, 1-10-100 mV,/ 1 A, flexible Ø 170 mm max.)
SP 261 - AC+DC current transducer (1200 A, 1 mV/ 1 A, Ø 50 mm)
SP 280 - Current Transducer with BNC (20 AAC/ 30 ADC, 100 mV/1 A, Ø 19 mm)

Specifications subject to change without notice - FTDAS1000GB/99

AFAQ ISO 9001 AFAQ N°1997/7001

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