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SEFRAM

DAS 1400

A NEW FAMILY OF PAPERLESS RECORDERS 6 TO 36 UNIVERSAL CHANNELS TO COVER ALL YOUR APPLICATIONS

- 6 to 36 channels
- Universal inputs
- DC Voltage, TRMS AC+DC,
- Frequency, Thermocouples, PT100.
- 16 logic channels
- Power Analysis function
- 16 Bit resolution
- Colour LCD TFT screen (12")
- Max. sampling frequency : 1Ms/s par channel
- Bandwidth: 100 kHz
- Memory : 32 Mword
- Internal hard disk : 80 Gb
- Interfaces: USB, XGA, Ethernet
- IEC 1010 - CAT III - 600V

2008

NEW

- Power Analysis
- Strain Gauge measurements



DAS 1400

UNIVERSAL INPUTS: 3 ALTERNATIVES

The DAS 1400 can be configured with 6, 12, 18, 24, 30 or 36 analogue channels and 16 logical channels. You can choose between three types of input modules:

- 6 universal inputs : Designed for high speed and high voltage applications
- 6 Channels for strain gauge measurements
- 12 multiplexed inputs

The DAS1400 is very flexible. The user can configure or upgrade the recorder for particular applications with up to three modules. Modules can be added or exchanged without return to the factory.

EASE OF USE

DAS 1400 are the easiest to use recorders on the market today. The concept of previous families has been maintained, but now backed by the Linux operating system.

All parameters are displayed on the screen. With the mouse, you can access and change functions and parameters. A help screen is provided for each function.

DATA ACQUISITION AND INTERFACES

The DAS 1400 offers various storage options: internal hard disk (80GB), external USB flash memory (USB key), USB storage devices (CD/DVD writer, external hard disk,...).

You can save your records and the recorder parameters (setup). The Ethernet interface provides fast and efficient remote control of the recorder and will allow very fast transfer of data files to personal computers.

PANORAMIC LCD SCREEN

The high resolution LCD screen provides excellent quality real-time graphical display, even in difficult conditions.

COMPLETE SOFTWARE

SEFRAM View displays graphs on your personal computer as well as export to a spreadsheet (Excel™) or word processor (Word™).

Flexpro software (option): Powerful analysis software with more than 100 functions.

REAL TIME ACQUISITION ON HARD DISK

For long recording, the DAS 1400 provides direct acquisition on to the internal hard disk – up to 100kHz for 6 channels simultaneously.



For more information, contact our local distributor or us on +33 (0).4.77.59.36.81

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INSTRUMENTS & SYSTEMES

SPECIFICATIONS - UNIVERSAL INPUT BOARD

Channels :	6 per board
VOLTAGE	
DC voltage ranges :	1mV to 1000 V
Max offset :	± 5 ranges (except 1000V)
Accuracy :	± 0,1% ± 10µV ± 0,2% offset
TRMS AC+DC ranges :	200mV to 500V.
Bandwidth (-3dB) :	5Hz to 500Hz
Crest factor :	2,2

FREQUENCY

Sensitivity :	300mV rms min.
Duty cycle :	10%
Frequency range :	10Hz to 100kHz
Basic accuracy :	0,2% of full scale
Maximum input voltage :	± 500VDC or 440V AC (sine)

TEMPERATURE

Sensor	Using environnement	Ranges
J	-20°C to 1200°C	20°C to 2000°C
K	-250°C to 1370°C	20°C to 2000°C
T	-200°C to 400°C	20°C to 500°C
S	-50°C to 1760°C	50°C to 2000°C
B	-200°C to 1820°C	50°C to 2000°C
E	-250°C to 1000°C	20°C to 1000°C
N	-250°C to 1300°C	20°C to 1000°C
W5	0 to 2320°C	50°C to 2000°C
Accuracy	Cold junction compensation : ± 1,25°C	

SAMPLING

Resolution :	14 bits
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% à +100%

BANDWIDTH

Analog input bandwidth (-3dB) :	range > 1V: 100kHz
Programmable digital filters :	range ≤ 50mV: 50kHz
Input impedance (DC) :	10 Hz, 100 Hz, 1 kHz, 10 kHz >25MΩ for range <1V 1 MΩ for upper ranges
Input capacitance :	150pF typ.
Maximum input voltage :	between one channel and the frame ground ± 500V between 2 terminals of one channel ± 500V
Isolation between frame ground and channel	>100Mohms at 500VDC

POWER ANALYSIS FUNCTION

This function is available only if your recorder has a 6 universal input board + internal software ≥ V2.0

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

LOGIC INPUT

Channels	16
TTL - Max voltage	24V
Available functions	triggering acquisition on alarm triggering on logical words acquisition in memory mode
Sensor supply	12 V DC
Alarms	3 (2 TTL , 1 relay)

FOR ORDERING

SEFRAM DAS1400/01	Recorder with 6 channels (universal input)
SEFRAM DAS1400/02	Recorder with 12 channels (universal input)
SEFRAM DAS1400/03	Recorder with 18 channels (universal input)
SEFRAM DAS1400/10	Recorder with 12 channels (multiplexed input)
SEFRAM DAS1400/20	Recorder with 24 channels (multiplexed input)
SEFRAM DAS1400/30	Recorder with 36 channels (multiplexed input)
SEFRAM DAS1400/11	Recorder with 18 channels (6 universal input + 12 multiplexed input)
SEFRAM DAS1400/21	Recorder with 24 channels (12 universal input + 12 multiplexed input)
SEFRAM DAS1400/12	Recorder with 30 channels (6 universal input + 24 multiplexed input)

SPECIFICATIONS - MULTIPLEXED BOARD

Channels :	12 per board
VOLTAGE	
DC voltage ranges :	1mV to 50 V
Max offset :	± 5 ranges
Accuracy :	± 0,1% ± 10µV ± 0,1% offset
TRMS AC+DC ranges :	200mV to 50V.
bandwidth (-3dB) :	5Hz à 100Hz
Crest factor :	2,2

TEMPERATURE

Sensor	Using environnement	Ranges
PT100 (2,3,4 wires)	-200°C to 850°C	20°C to 1000°C
J	-20°C to 1200°C	20°C to 2000°C
K	-250°C to 1370°C	20°C to 2000°C
T	-200°C to 400°C	20°C to 500°C
S	-50°C to 1760°C	50°C to 2000°C
B	-200°C to 1820°C	50°C to 2000°C
E	-250°C to 1000°C	20°C to 1000°C
N	-250°C to 1300°C	20°C to 1000°C
W5	0 to 2320°C	50°C to 2000°C
Accuracy	Cold junction compensation: ± 1,25°C	

SAMPLING

Resolution :	16 Bits
Sampling rate :	200 µs maxi.
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

Analog input bandwidth (-3dB) :	1 kHz at -3 dB
Programmable digital filters :	0,1Hz, 1Hz, 10Hz, 100Hz
Input impedance (DC) :	2 Mohms ranges >5V 10Mohms for other ranges
Input capacitance :	150pF
Maximum input voltage :	between one channel and the frame ground ± 50V between 2 terminals of one channel ± 50V all input are differential, non isolated ± 5V for ranges ≤ 5V ± 50V for ranges > 5V
Common mode voltage (max.)	

GENERAL SPECIFICATIONS

DISPLAY	
Screen :	TFT LCD coloured screen 12 inches 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=ax²+b, y=(log x)+b, yae ^(x+b) +c +, -, x, / between channels
Automatic measurements	20 automatic measurements (F, T, Vpp, Tm.....)
STORAGE	
Setup backup :	16 named in RAM, unlimited on the hard disk
Internal hard disk :	80 Gb.
Interfaces	4 USB ports, VGA, Ethernet
MISCELLANEOUS	
Power supply	85VAC to 264 VAC, 47Hz to 63 Hz
Max. consumption:	60W
Dimensions & weight	384 x 445 x 195 , 7.5 kg
Operating temperature range	0°C to 40°C
Max. RH	80% (without condensation)
Storage temperature range :	-20°C to 60°C
Warranty period	1 year
Safety	CEI 1010 CAT III , 600V

OPTIONAL ACCESSORIES

984401000	12 channels multiplexed board for VDC 1mV to 25 V, T°, PT100
984402000	6 channels universal input board for VDC 1mV to 1000V , VAC RMS , T°
984402500	6 channels Strain Gange Isolated, 1mV to 50 V
984407000	Carrying case
910008100	Flexpro software (basic)
910008200	Flexpro software (comprehensive)
298504246	Ethernet cable (crossed - 5m)
910007100	shunt - 0,01 ohm 1% 3A
910007200	shunt - 0,1 ohm 1% 1A
207030301	shunt - 0,01 ohm 0,5% 30A
207030500	shunt - 0,001 ohm 0,5% 50A
989006000	shunt - 1 ohm 0,1% 0,25W
989007000	shunt - 50 ohms 0,5% 0,25W
984405500	Isolated logical channels adaptor



Strain Gauge board for Recorders

DAS1400 and 8440

The strain gauge board is fully compatible with SEFRAM 8440 and DAS 1400.

Capabilities

Channels	6 (fully isolated)
Measurements	Strain gauge, voltage, thermocouple and current with optional external shunt
Input	differential, fully isolated
Input impedance	2 M Ω for ranges < 1 Volt 1 M Ω for ranges \geq 1 Volt
Maximum input voltage (Between one input and ground, or between ground and mechanical chassis)	200V DC
Input voltage	\pm 50V
Isolation (between channels and mechanical chassis)	>100 M Ω under 500V
Input connectors	Fast plug-in / plug-out, 6 contacts per channel
<i>All accuracies are given with 1Hz filter</i>	
Voltage measurement	
Maximum range	50 V
Lowest range	1 mV
Maximum offset	\pm 50V limited at \pm 5 ranges
Accuracy	\pm 0.1% of full scale \pm 10 μ V \pm 0.1% of offset
Resolution	16 bit
Offset drift	100ppm/ $^{\circ}$ C \pm 1 μ V/ $^{\circ}$ C
Sampling rate	100kHz (or 10 μ s)
Noise	<30 μ V without filter
Strain Gauge measurements	
The unit is μ STR (micro strain) - 2000 μ STR = 1 mV/V	
Bridge	Full bridge (4 and 6 wires), half bridge
Automatic balancing range	\pm 25000 μ STR
Bridge supply voltages	2V and 5V (symetrical \pm 1V and \pm 2.5V)
Gauge rate	2 (ajustable between 1.8 and 2.2)
Maximum range	50 000 μ STR
Minimum range	1000 μ STR
Maximum offset	\pm 50000 μ STR
Accuracy	\pm 0.1% of full scale \pm 5 μ STR \pm 0.1% of offset
Resolution	16 bit
Sampling rate	100kHz (or 10 μ s)
Offset drift	100ppm/ $^{\circ}$ C \pm 1 μ V/ $^{\circ}$ C
Bandwidth	
3 dB bandwidth	>18 KHz
Analogue filter (low pass 60dB/decade)	1KHz, 100Hz, 10Hz
Low pass (digital)	1 Hz, 0.1 Hz, 0.01 Hz, 0.001 Hz

Temperature measurement

Cold junction compensation for J,K,T,S,N,E,W5 thermocouples : \pm 1.25 $^{\circ}$ C

Sensor	Maximum possible range	Range
COUPLE J	-210 $^{\circ}$ C to 1200 $^{\circ}$ C	20 $^{\circ}$ C to 2000 $^{\circ}$ C
COUPLE K	-250 $^{\circ}$ C to 1370 $^{\circ}$ C	20 $^{\circ}$ C to 2000 $^{\circ}$ C
COUPLE T	-200 $^{\circ}$ C to 400 $^{\circ}$ C	20 $^{\circ}$ C to 500 $^{\circ}$ C
COUPLE S	-50 $^{\circ}$ C to 1760 $^{\circ}$ C	50 $^{\circ}$ C to 2000 $^{\circ}$ C
COUPLE B	200 $^{\circ}$ C to 1820 $^{\circ}$ C	50 $^{\circ}$ C to 2000 $^{\circ}$ C
COUPLE E	-250 $^{\circ}$ C to 1000 $^{\circ}$ C	20 $^{\circ}$ C to 1000 $^{\circ}$ C
COUPLE N	-250 $^{\circ}$ C to 1300 $^{\circ}$ C	20 $^{\circ}$ C to 1000 $^{\circ}$ C
COUPLE W5	0 $^{\circ}$ C to 2320 $^{\circ}$ C	50 $^{\circ}$ C to 2000 $^{\circ}$ C

To order
984402500

Supplied with : a set of 6 connectors, user and setup manual

Specifications subject to change without notice - FTDAS1400 A 01



32, rue Edouard Martel
B.P. 55 • 42009 - St Etienne cedex
direct sales lines :
+33 (0).4.77.59.36.81
Fax. +33 (0).4.77.57.23.23
Web : www.sefram.fr • e-mail : sales@sefram.fr

For assistance and ordering