Data Sheet

High Speed Multi-Function Recorders
Models DAS30 / DAS50 / DAS60

The DAS 30/50/60 high speed multi-function recorders feature versatile channel configurability, high speed sampling (1 MSa/s), a wide input range (±5 mv to ±500 V), large internal solid state memory (up to 64 GB), and 9.5 hours of battery life. Combined with the CAT III isolation rating, these instruments are well suited for applications ranging from small sensor signal logging to electrical power analysis.

The best-in-class 2 µs sampling interval in file mode lets you capture transient events with confidence. Additionally, the large built-in memory allows for data recording over longer periods of time.

Each channel can record a different signal such as voltage, temperature, current or frequency simultaneously, using a common time base. The next-generation touchscreen features unlimited data scrolling, zoom in/out function as well as drag and drop delta cursors for precision measurements.

Applications

- Measure signals ranging from small sensors to large electrical systems
- Maintenance and failure analysis
- Power analysis of single and three phase systems

Feature	DAS30	DAS50	DAS60
Isolated Universal Channels	2	4	6
File Mode Sampling Interval	5 µs (200 kSa/s)		2 µs (500 kSa/s)
Memory	32 GB	32 GB	64 GB
110 mm Thermal Printer	Factory option	Factory option	Factory option
2 Pt100/Pt1000 Inputs	Factory option	Factory option	Included
Power Analysis	Single-Phase	Single-Phase & Delta (Aron)	Single-Phase, & Delta (Aron), Star
Power Analysis Frequency	50/60 Hz	50/60 Hz	50/60 and 400 Hz
PWM Analysis	-	-	Included
Alarms	2	2	4

Features and benefits:

- Fast 1 MSa/s sample rate (memory mode) and 100 kHz bandwidth for capturing intermittent events
- Accurately view and record signals from ±5 mV to ±500 VDC and 424 VRMS
- CAT III 600 V rated isolated channels
- Wide 10-inch touchscreen TFT display
- Capture mixed signals with one instrument, such as high voltage/current waveforms, temperature and logic data
- Battery life up to 9.5 hours
- 64 GB (DAS60) and 32 GB (DAS30/50) built-in solid state memory
- 2, 4, or 6 universal analog channels
- 14-bit resolution
- 16 logic input channels
- Temperature measurements supporting thermocouples and Pt100/Pt1000 sensors
- Frequency counter
- WiFi monitoring and control (standard USB WiFi dongle required)
- 2 USB host ports and one LAN interface
- Free software for control and analysis
- Virtual Networking Computing (VNC)
- 110 mm integrated thermal printer (optional)

Technical data subject to change
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Top panel

DAS60

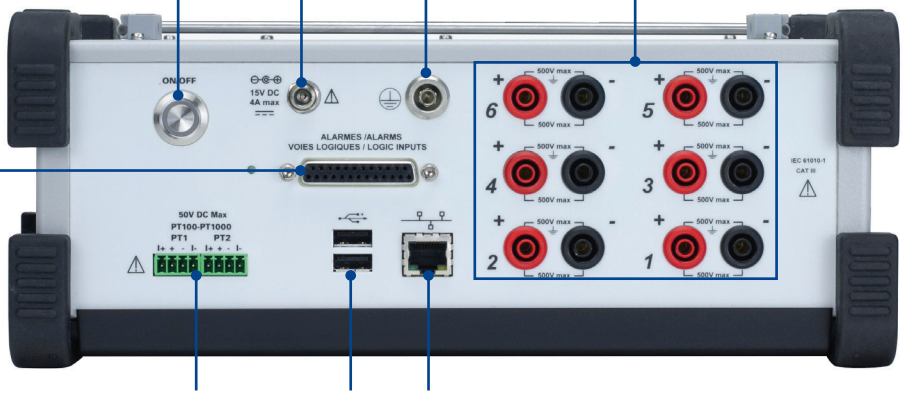
Power button

DC power input

Ground

Analog channels
Isolated CAT III 600 V rated analog input channels for voltage, current and temperature logging with thermocouples.

Alarm output/ Logic input
Pulse counter and frequency measurements.



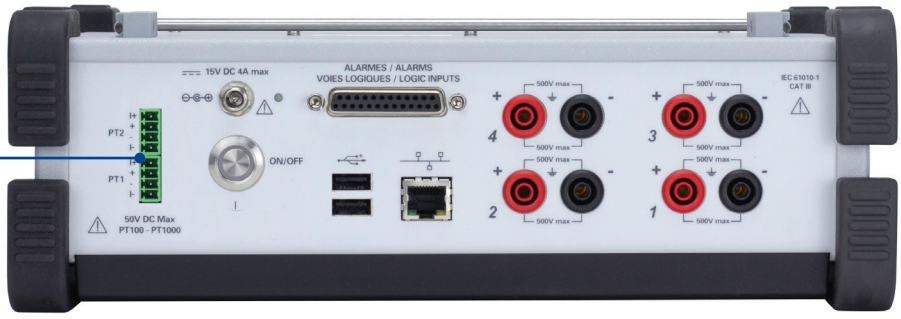
Pt100/Pt1000
2 inputs for dedicated temperature measurements

USB host
Save or load configuration and data acquisition files

LAN
Remote control and monitoring

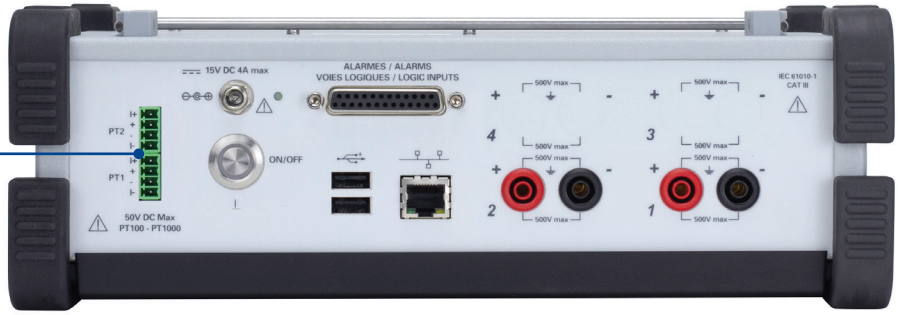
DAS50-T

Pt100/Pt1000
Factory installed option

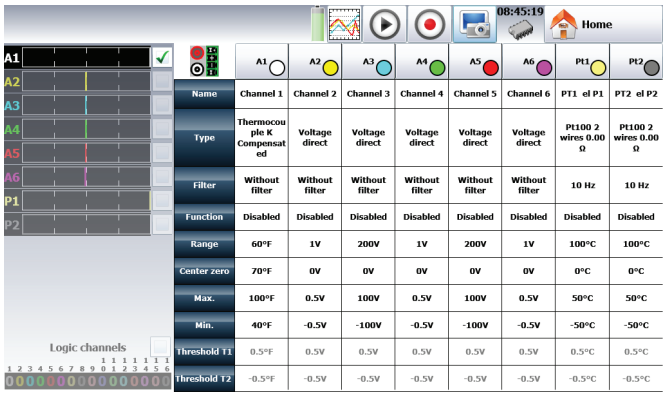


DAS30-T

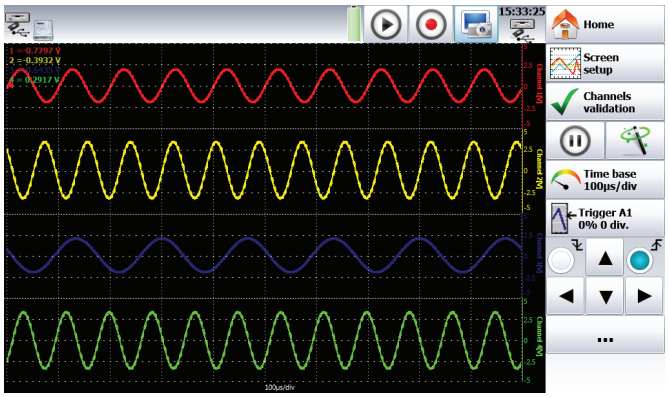
Pt100/Pt1000
Factory installed option



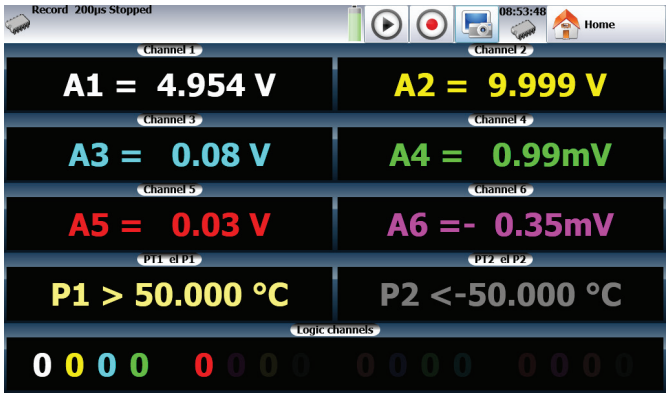
Operation highlights



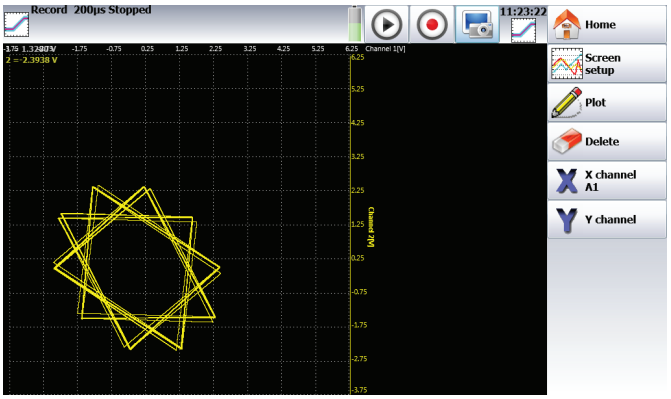
Channel setup displays all parameters on a single screen



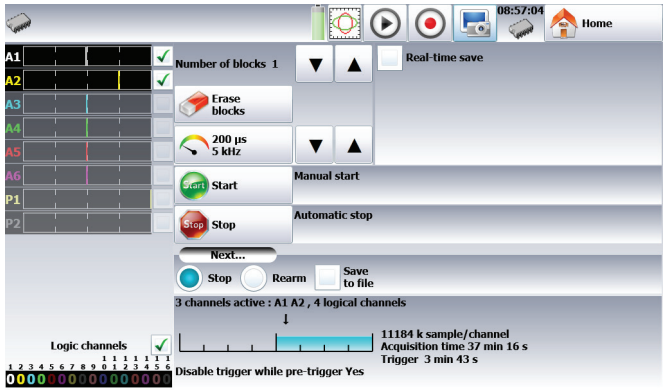
Oscilloscope like display mode with 100 kHz bandwidth



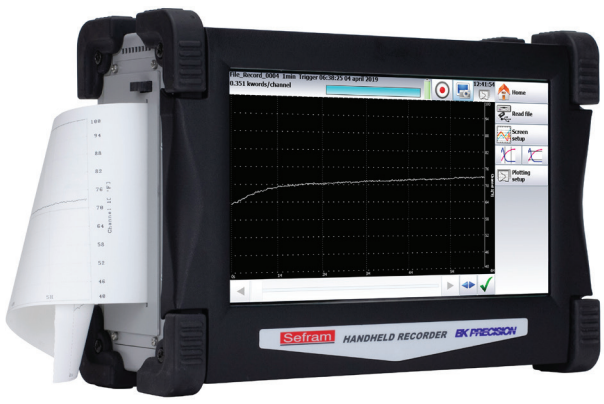
Numerical display of measured values



XY mode for plotting one varying signal versus another

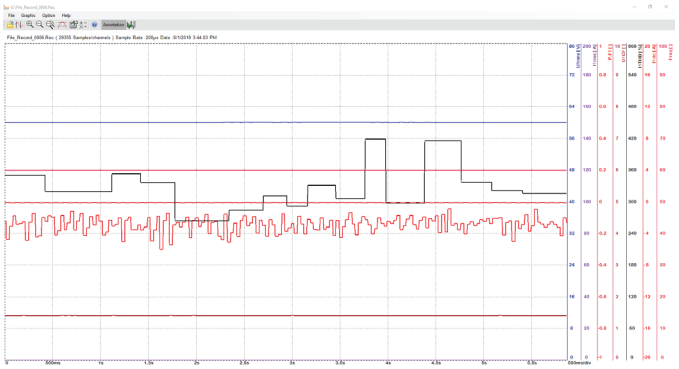


Comprehensive triggering capabilities: Configure triggers on analog and logic channels. Select from multiple combinations of thresholds, channels and conditions.



Optional thermal printer enables hard copies of recorded data

The tools you need



Sefram Viewer and Sefram Pilot are license free software that can be downloaded from www.bkprecision.com. The software tools provide the following features:

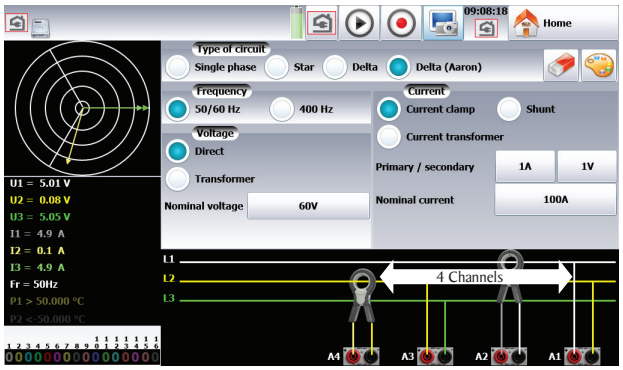
Sefram Viewer

- Post acquisition analysis
- Display measurement results in graphical or numerical format
- 7 math functions such as y=ax+b, y=ln(x)+b, and y=exp(cx)+b

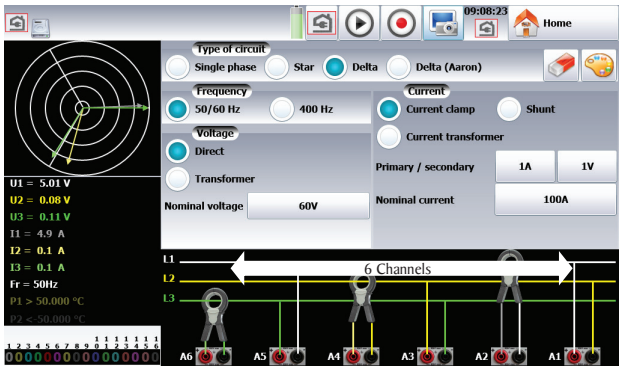
Sefram Pilot

- Remote control and setup
- Channel and trigger configuration
- Export measurement data to a computer
- Start and stop recording
- Real time display

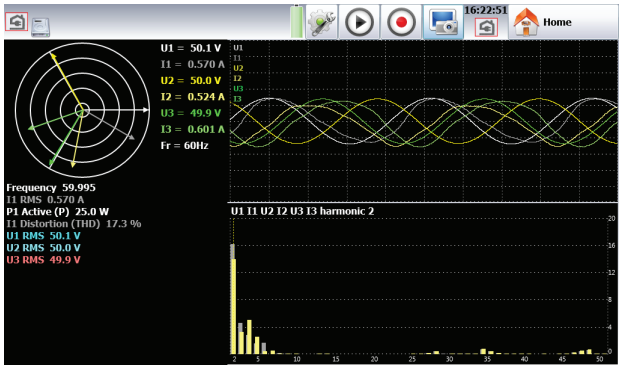
Energy / Power Analysis



Aron configuration enables 3 phase current and voltage measurements with 4 channels

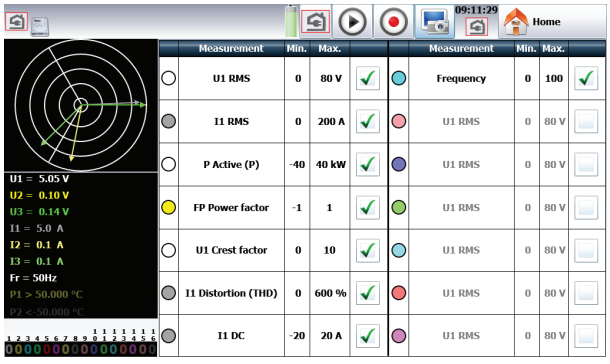


Choose from three phase configurations Delta, Delta (Aron) or Star



Real time display of Fresnel diagram, oscilloscope mode and harmonics (up to 50th)

Note: Current clamps not included, visit www.bkprecision.com to purchase.



Select which measurements are displayed on screen

The tools you need

Virtual Network Computing (VNC) capability

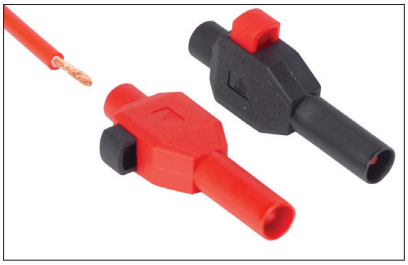
The recorder's built-in VNC provides a graphical desktop sharing system to remotely control the instrument from a computer with a full graphical interface that replicates the instrument's front panel using a mouse and keyboard.

Ordering information

Model	2 Pt100/Pt1000 Inputs Factory Installed	110mm Thermal Printer Factory Installed
DAS30	-	-
DAS30-P	-	√
DAS30-T	√	-
DAS30-PT	√	√
DAS50	-	-
DAS50-P	-	√
DAS50-T	√	-
DAS50-PT	√	√
DAS60	Standard	-
DAS60-P	Standard	√

Included accessories

One set of CAT III sheathed banana cables with alligator clips per channel



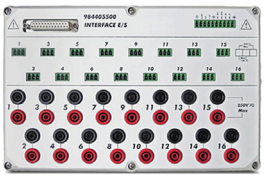
One set of bare wire to banana adapters per channel

Rugged carrying case

Also included: AC mains adapter 100 / 240 V, 25 pin male connector and backshell, soft wipe, stylus, screwdriver, roll of thermal printer paper (-P models)

Optional accessories

Rackmount kit
- 906001000 (DAS60)
- 903004000 (DAS30/50)



16 channel isolated logic adapter (984405500)

Note: Current clamps not included, visit www.bkprecision.com to purchase.

Specifications

Note: All specifications apply to the unit after a temperature stabilization time of 30 minutes over an ambient temperature range of 23 °C ± 5 °C.

Universal Inputs			
Number of Channels	DAS30	2	
	DAS50	4	
	DAS60	6	
Voltage			
Maximum Input Voltage		±500 VDC or 424 VRMS	
Maximum Offset		± 5 ranges (up to ± 500 V)	
Accuracy		0.1% of the full scale ±10 µV	
True RMS AC/DC Ranges		200 mV to 424 V	
Response Time		100 ms typical (40 ms to 50 Hz)	
Crest Factor		2.2 and 600 V Max	
Input Impedance (DC)		> 25 MΩ for upper ranges < 1 V, 1 MΩ for upper ranges, 150 pF typical	
Channel Isolation		> 100 MΩ at 500 VDC	
Bandwidth and Filters			
Bandwidth (-3 dB)	> 1 V	100 kHz	
	> 50 mV	50 kHz	
	5 mV	20 kHz	
True RMS AC/DC Bandwidth		5 Hz to 500 Hz	
Internal Analog 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	
Sensitivity		100 mV RMS min.	
Duty Cycle		10% min.	
Frequency Range		0.1 Hz to 100 kHz	
Basic Accuracy		0.02% of full scale	
Data Acquisition and Trigger			
Resolution		14 bit	
Fastest Sampling Interval (single channel)		File mode	Memory mode
	DAS30	5 µs (200 kSa/s)	1 µs (1 MSa/s)
	DAS50		
	DAS60	2 µs (500 kSa/s)	
Memory Length (memory mode)		32 M word segments up to 128 blocks	
Triggering		Positive edge, negative edge, on logic input, delay, go no go	
Pre-trigger		±100%	
Temperature with Thermocouples			
Sensor Range by Type (cold junction compensation: ±0.5 °C)	J	410 °F to 2192 °F (210 °C to 1200 °C)	
	K	482 °F to 2498 °F (250 °C to 1370 °C)	
	T	392 °F to 752 °F (200 °C to 400 °C)	
	S	122 °F to 3200 °F (50 °C to 1760 °C)	
	B	392 °F to 3308 °F (200 °C to 1820 °C)	
	E	482 °F to 1832 °F (250 °C to 1000 °C)	
	N	482 °F to 2372 °F (250 °C to 1300 °C)	
	C	32 °F to 4208 °F (0 °C to 2320 °C)	
	L	392 °F to 1652 °F (200 °C to 900 °C)	

Power Analysis Function		
Networks		Single phase, 3 phase
Display		Fresnel diagram, oscilloscope, data
Measurements		Mean value, RMS, peak, crest factor, THD and DF for voltage & current, active, reactive and apparent power, power factor (ø)
Harmonics		Calculated up to rank 50, with display and record
Logic Input		
Channels		16
TTL Maximum Voltage		24 V
Sampling Interval		1 µs (1 MSa/s) per channel
Sensor Supply		9 to 15 VDC
Alarms		A & B, 0 to 5 V output
Pt100/Pt1000 (factory option for DAS30 & DAS50)		
Number of Channels		2
Current		1 mA for Pt100, 100 µA for Pt1000
Resolution		20 bits
Temperature Range		-392 °F to 1562 °F (-200 °C to +850 °C)
Measurements		2, 3, 4 wires
Accuracy @ 20 °C		±0.2 °C
Printer (factory option for all models)		
Paper Width		110 mm
Paper Speed		1 mm/min. to 25 mm/s
Paper Speed		10 mm/s max. (memory mode)
Resolution	Y axis	8 dots/mm
	X axis	16 dots/mm
	XY mode	8 dots/mm (both axis)
General		
Internal Solid State Memory (file mode)		32 GB (DAS30, DAS50)
		64 GB (DAS60)
Operating Temperature		0 °C to 40 °C, 80% RH (no condensation)
Storage Temperature		-68 °F to 140 °F (-20 °C to 60 °C)
Display		10" TFT touchscreen LCD, backlit, 1024 x 600 dots
Power Supply		15 V / 4 A max with main adapter (100 / 240 VAC)
Interfaces		2 x USB host, LAN (10/100 base-T with RJ45 socket)
Battery		Non removable, Lithium-ion
Typical Battery Life		9.5 hours with standby mode, 4 hours without standby mode
Safety		IEC 61010 - CAT III 600 V
Weight		5.5 lbs (2.5 kg)
Dimensions (W x H x D)		8.25" x 11.5" x 4.1" (210 x 295 x 105 mm)
Warranty		Two Years
Supplied Accessories		AC mains adapter 100 / 240 V, rugged carrying case, CAT III banana test leads(2) + alligator clips(2), bare wire to banana adapters(2), 25 pin male connector(1) and backshell, soft wipe, stylus, screwdriver, roll of thermal printer paper (-P models),calibration certificate & test report

(1) User configurable with solder cups.
(2) One set per channel

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