

High Speed Multi-Function Recorders

Models DAS30 / DAS50 / DAS60



The DAS 30/50/60 series of high speed multi-function data acquisition recorders feature universal inputs, high speed sampling (1 MSa/s), a wide input range (± 1 mv to ± 500 V), large internal solid-state memory (up to 64 GB), and up to 9.5 hours of battery life. These portable and rugged data acquisition systems also provide CAT III 600V isolated input channels, 16 digital inputs, alarm outputs, and a dedicated power analysis mode for analyzing single or 3-phase electrical networks.

Each channel can acquire a different signal such as voltage, temperature (thermocouple), current or frequency simultaneously using a common time base. Additionally, two dedicated RTD inputs are available as a factory option or standard on the DAS60.

The 10-inch touchscreen makes it easy to configure channels, scroll through acquired data, zoom in and out, and position cursors for precise measurements. Remote control or transferring of recorded data is convenient using the built-in Ethernet and USB interfaces. All models are available with a printer option.

Applications

- Product development
- Process monitoring
- Maintenance and failure analysis
- Power analysis

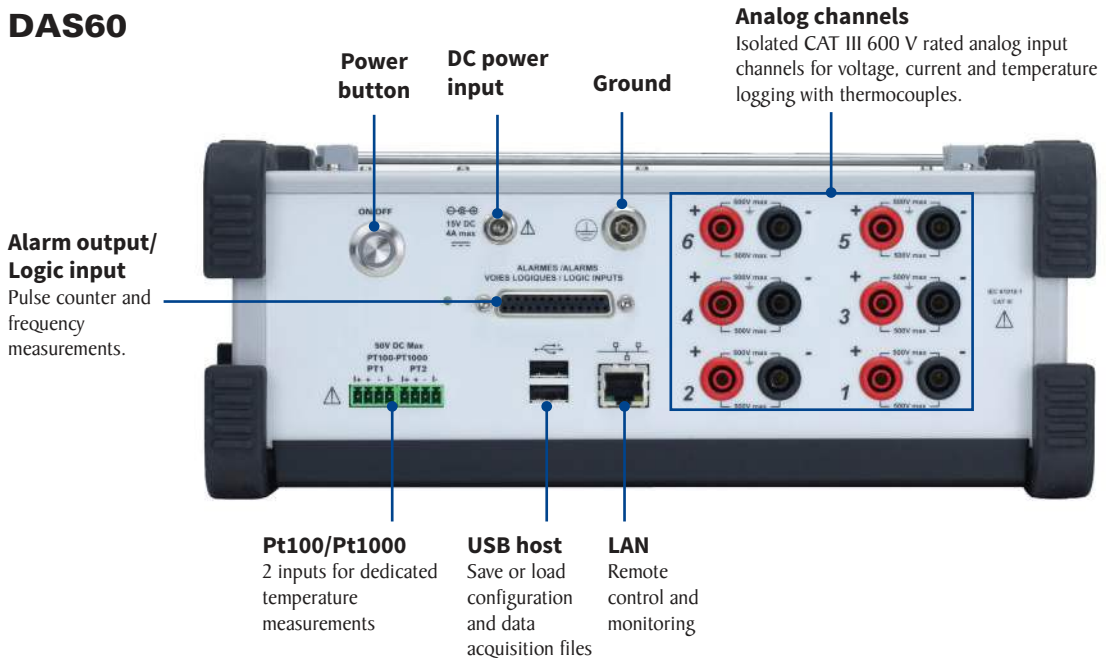
Features and benefits:

- Fast 1 MSa/s sample rate (memory mode) and 100 kHz bandwidth for capturing intermittent events
- Accurately view and record signals from ± 1 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)

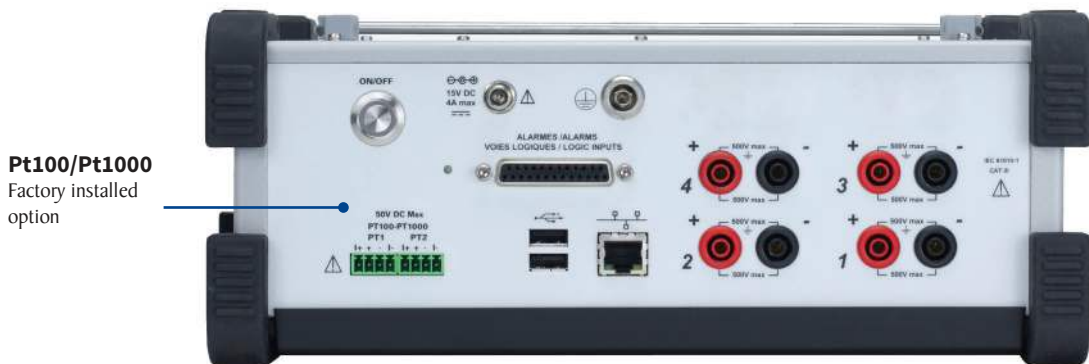
Feature	DAS30	DAS50	DAS60
Isolated Universal Channels	2	4	6
Maximum Sampling Rate (Memory Mode)	1 MSa/s	1 MSa/s	1 MSa/s
Maximum Sampling Rate (File Mode)	200 kSa/s	200 kSa/s	500 kSa/s
110 mm Thermal Printer	Factory option	Factory option	Factory option
Memory	32 GB	32 GB	64 GB
2 Pt100/Pt1000 Inputs	Factory 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

Top panel

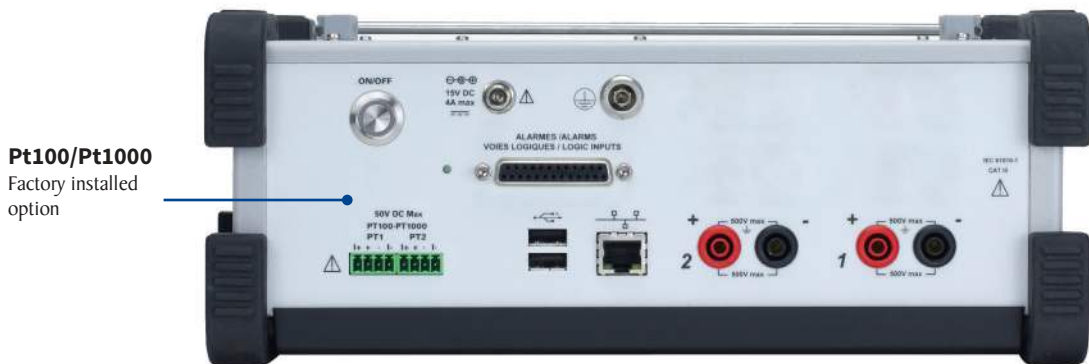
DAS60



DAS50-T



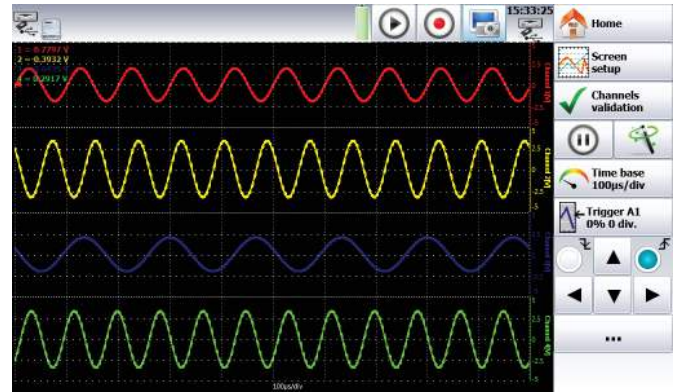
DAS30-T



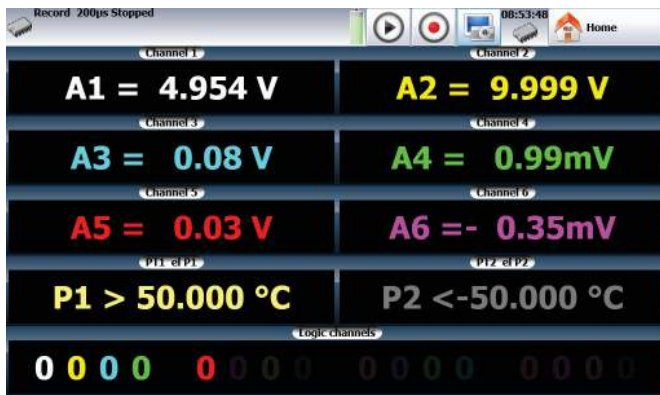
Operation highlights

Channel	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	PT1 of P1	PT2 of P2
Name	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6	PT100 2 wires 0.00 Ω	PT100 2 wires 0.00 Ω
Type	Thermocouple K Compensated	Voltage direct	Voltage direct	Voltage direct	Voltage direct	Voltage direct		
Filter	Without filter	Without filter	Without filter	Without filter	Without filter	Without filter	10 Hz	10 Hz
Function	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Range	60°F	1V	200V	1V	200V	1V	100°C	100°C
Center zero	70°F	0V	0V	0V	0V	0V	0°C	0°C
Max.	100°F	0.5V	100V	0.5V	100V	0.5V	50°C	50°C
Min.	40°F	-0.5V	-100V	-0.5V	-100V	-0.5V	-50°C	-50°C
Threshold Y1	0.5V	0.5V	0.5V	0.5V	0.5V	0.5V	0.5°C	0.5°C
Threshold Y2	-0.5V	-0.5V	-0.5V	-0.5V	-0.5V	-0.5V	-0.5°C	-0.5°C

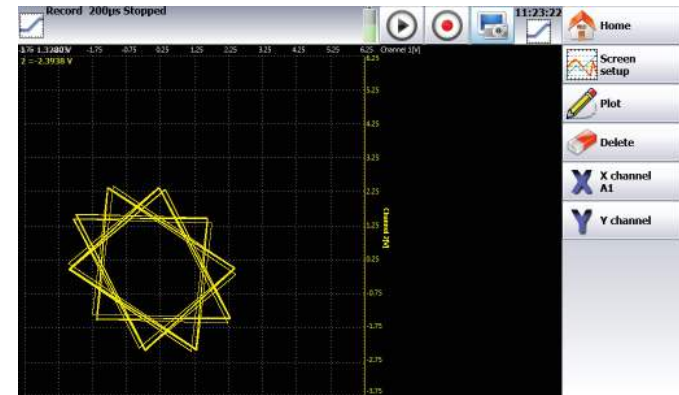
Channel setup displays all parameters on a single screen



Oscilloscope like display mode with 100 kHz bandwidth



Numerical display of measured values



XY mode for plotting one varying signal versus another

Number of blocks: 1
Real-time save:

Erase blocks:

200 µs / 5 kHz

Start: Manual start
Stop: Automatic stop

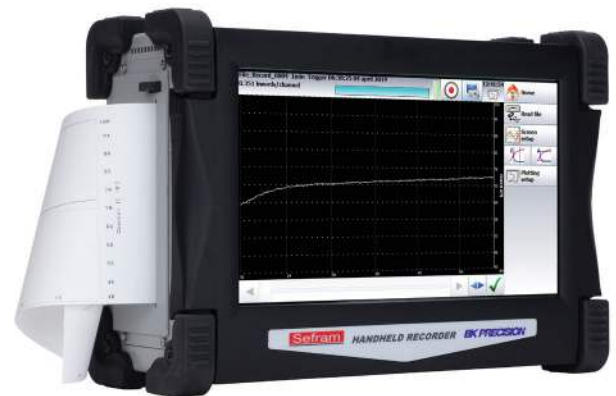
Next...
Stop: Rearm: Save to file:

3 channels active: A1 A2, 4 logical channels

11184 k sample/channel
Acquisition time 37 min 16 s
Trigger 3 min 43 s

Disable trigger while pre-trigger Yes

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:

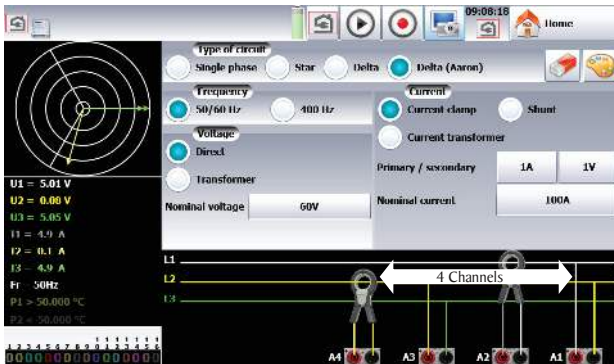
Sefram Viewer

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

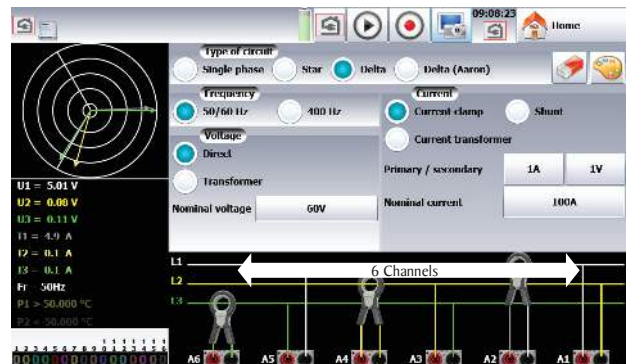
Sefram Pilot

- 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	√

Order Information for Accessories	
917008000	16-channel isolated logic channel module
903004000	19-inch rack mount kit for DAS30 and DAS50
903001000	Rugged carrying case for DAS30 and DAS50
906001000	19-inch rackmount kit for DAS60
906002000	Replacement rugged carrying case for DAS60
902402000	WiFi dongle for recorders

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 channel module (917008000)

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		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: ±1.25 °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 (ϕ)	
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 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

BK PRECISION

About B&K Precision

For more than 70 years, B&K Precision has provided reliable and value-priced test and measurement instruments worldwide.

Our headquarters in Yorba Linda, California houses our administrative and executive functions as well as sales and marketing, design, service, and repair. Our European customers are most familiar with B&K through our French subsidiary, Sefram. Engineers in Asia know us through our B+K Precision Taiwan operation. The independent service centers in Singapore and Brasil service customers in Singapore, Malaysia, Vietnam, Indonesia and South America, respectively.



● B&K Precision group member ● Independent service center ● Service center location

Quality Management System

B&K Precision Corporation is an ISO9001 registered company employing traceable quality management practices for all processes including product development, service, and calibration.

ISO9001:2015

Certification body NSF-ISR
Certificate number 6Z241-IS8



NSF-ISR

Registered to ISO 9001

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About Sefram

Established in 1947, Sefram has been designing and manufacturing data recorders for more than 70 years. Sefram joined the test and measurement division of Schlumberger in 1978, and has been a subsidiary of B&K Precision since 2004. Certified ISO 9001, Sefram's strategy is to provide innovative and high-quality test and measurement products for electronic and electrical applications.

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