

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

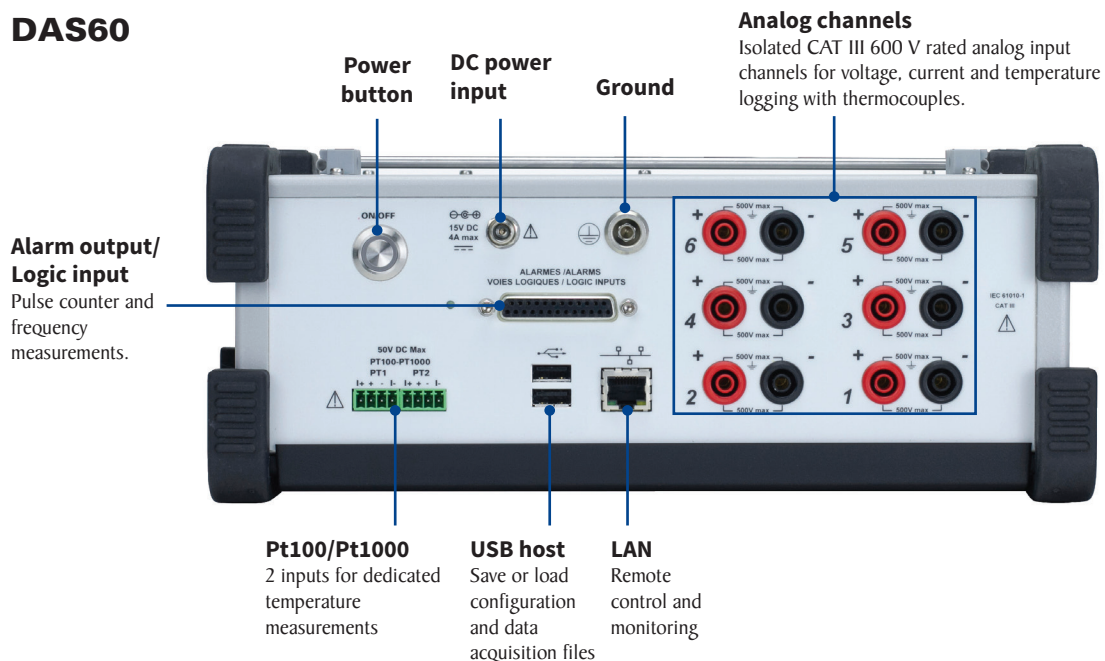
Features and benefits:

- 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)

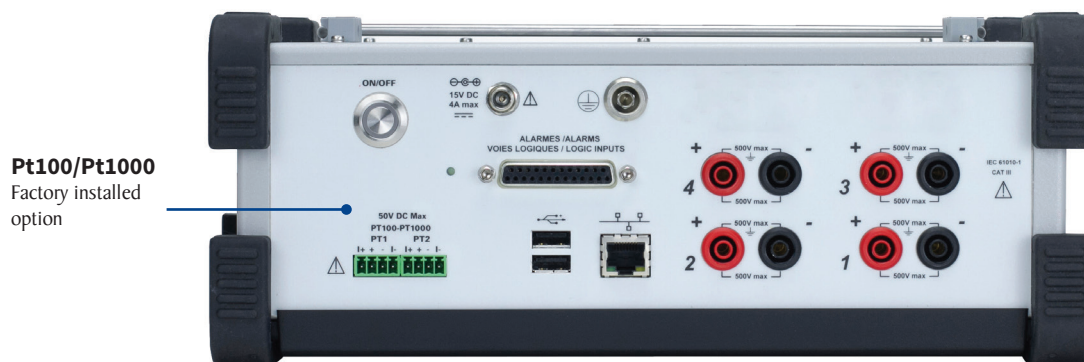
| Feature | DAS30 | DAS50 | DAS60 |
|-------------------------------------|----------------|-----------------------------|------------------------------------|
| Isolated Universal Channels | 2 | 4 | 6 |
| Maximum Sampling Rate (Memory Mode) | 1 MSa/s | 1 MSa/s | 1 MSa/s |
| Maximum Sampling Rate (File 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

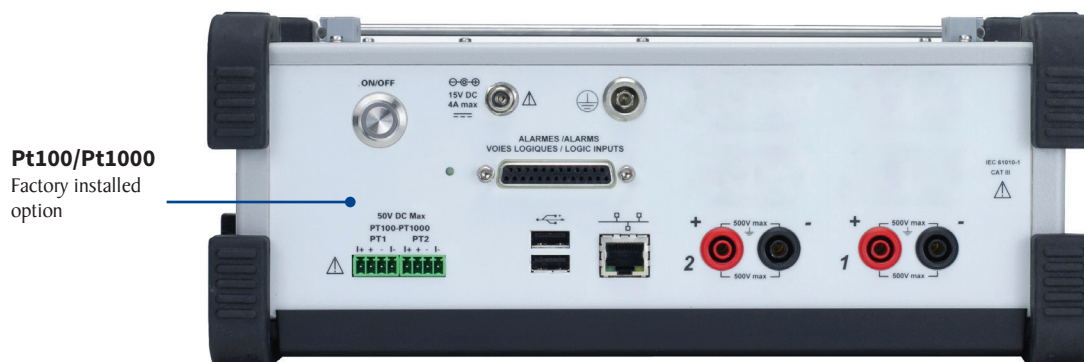
DAS60



DAS50-T



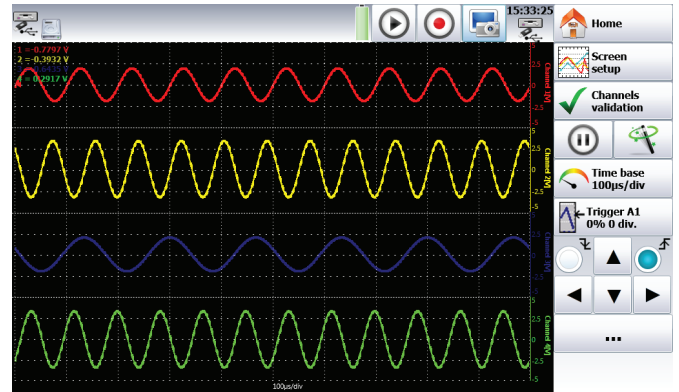
DAS30-T



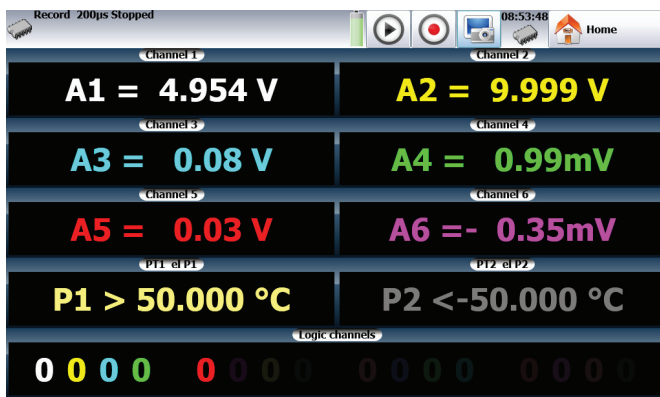
Operation highlights

| Channel | Channel 1 | Channel 2 | Channel 3 | Channel 4 | Channel 5 | Channel 6 | PT1 el P1 | PT2 el P2 |
|--------------|----------------------------|----------------|----------------|----------------|----------------|----------------|----------------------|----------------------|
| Name | Channel 1 | Channel 2 | Channel 3 | Channel 4 | Channel 5 | Channel 6 | PT1 el P1 | PT2 el P2 |
| Type | Thermocouple K compensated | Voltage direct | Voltage direct | Voltage direct | Voltage direct | Voltage direct | P1100 2 wires 0.00 Ω | P1100 2 wires 0.00 Ω |
| 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 T1 | 0.5°F | 0.5V | 0.5V | 0.5V | 0.5V | 0.5V | 0.5°C | 0.5°C |
| Threshold T2 | -0.5°F | -0.5V | -0.5V | -0.5V | -0.5V | -0.5V | -0.5°C | -0.5°C |

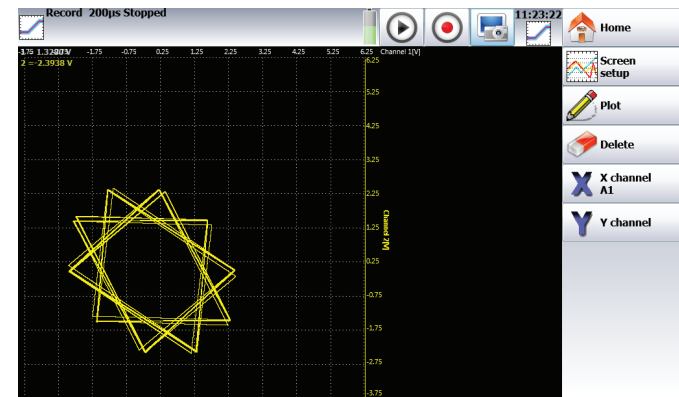
Channel setup displays all parameters on a single screen



Oscilloscope like display mode with 100 kHz bandwidth

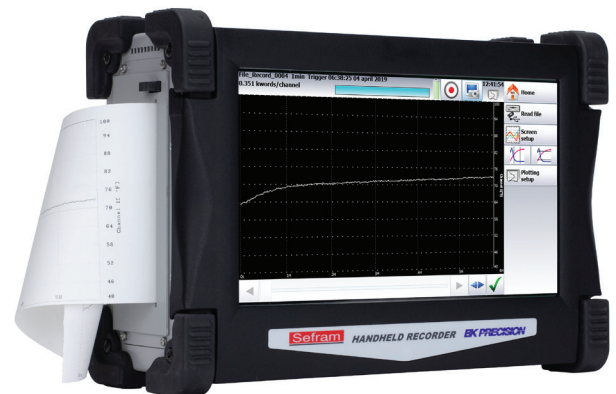


Numerical display of measured values



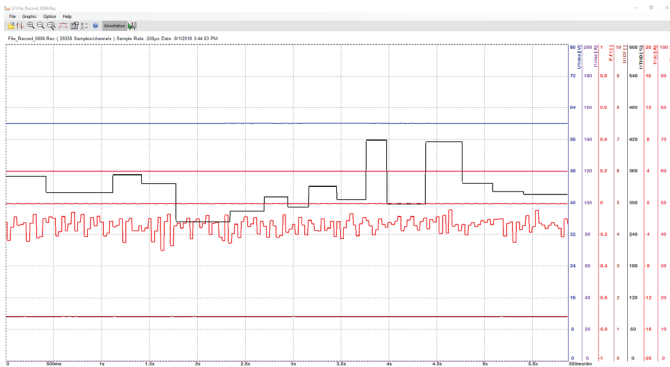
XY mode for plotting one varying signal versus another

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:

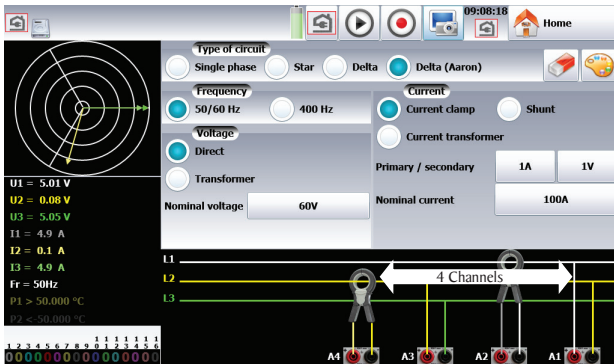
Sefram Viewer

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

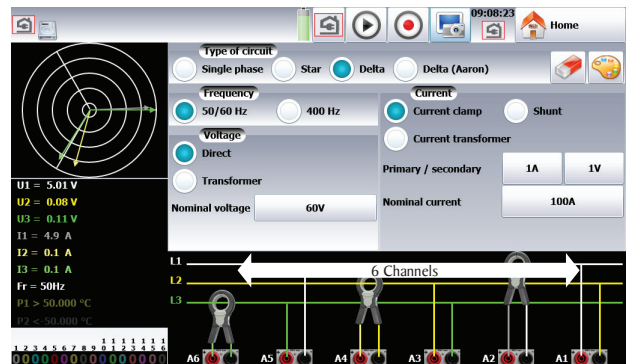
Sefram Pilot

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

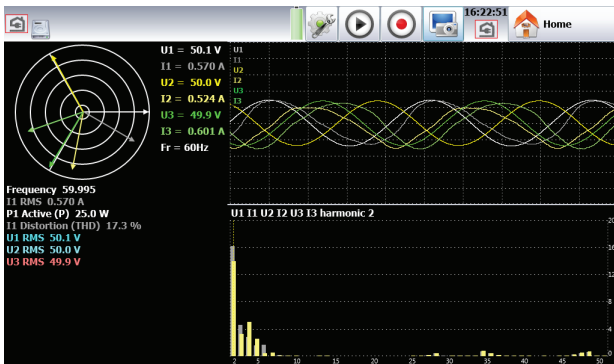
Energy / Power Analysis



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

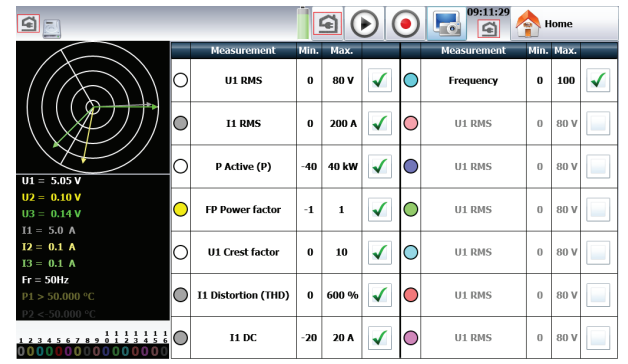


Choose from three phase configurations Delta, Delta (Aron) or Star



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

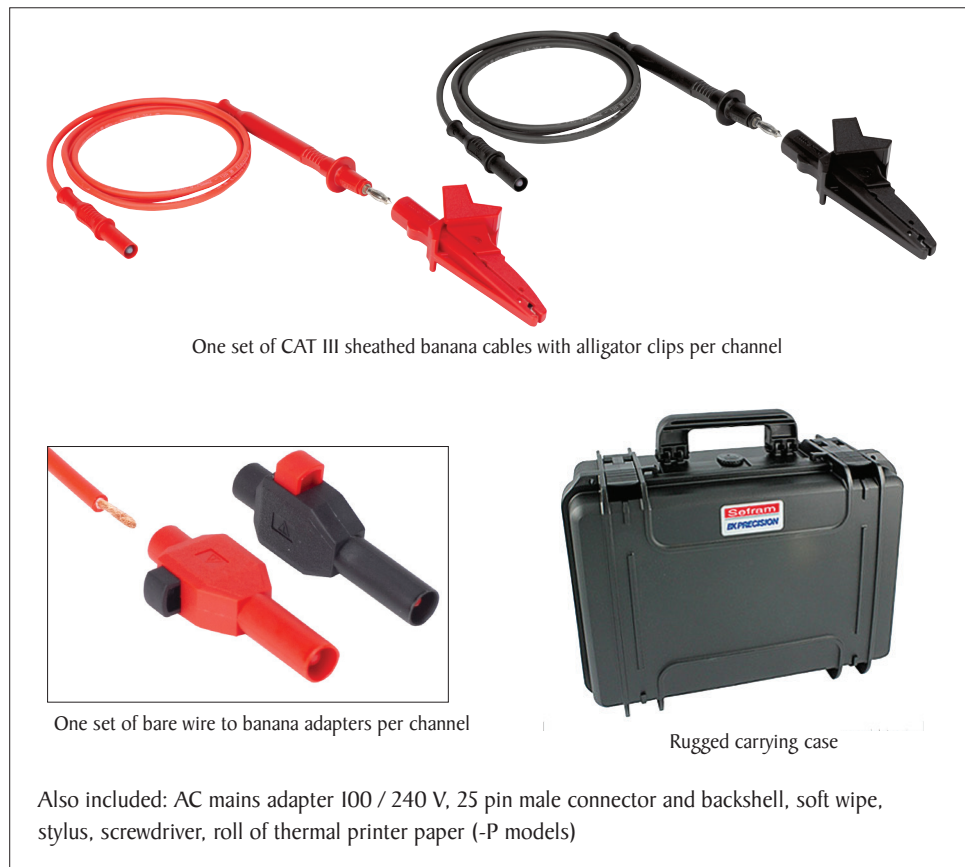
The recorder's built-in VNC provides a graphical desktop sharing system to remotely control the instrument from a computer with a full graphical interface that replicates the instrument's front panel using a mouse and keyboard.

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

Video Library

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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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