Data Sheet

Portable 10-Channel Data Recorder
Model DAS220-BAT

The DAS220-BAT measures and records parameters commonly found in process applications including voltage, temperature, current, resistance, frequency, and pulse. It includes 10 universal integrated analog channels with convenient screw input terminals. This recorder was developed by B&K Precision's subsidiary Sefram in France, which specializes in the design and manufacture of data acquisition instruments, field strength meters, and other test and measurement instruments.

Measurement results are viewed graphically and numerically on a 10-inch color touchscreen and saved to internal memory or external USB memory. Icon-driven menus make the instrument easy to navigate. The free DasLab Windows PC software allows users to remotely control and configure the recorder, transfer logging results and configuration files, and view live data in graphical or numerical format on the PC.

The data recorder features 32 GB of solid-state memory for data logging over extended periods. The internal battery provides back-up in the event of power loss.

Applications

- Temperature logging with thermocouples and platinum resistance temperature sensors
- Voltage measurements down to ± 0.5 mV range
- 4-20 mA current loop measurements
- Frequency, pulse totalization and pulse rotation measurements, which can be expressed in RPM (rotations per minute)

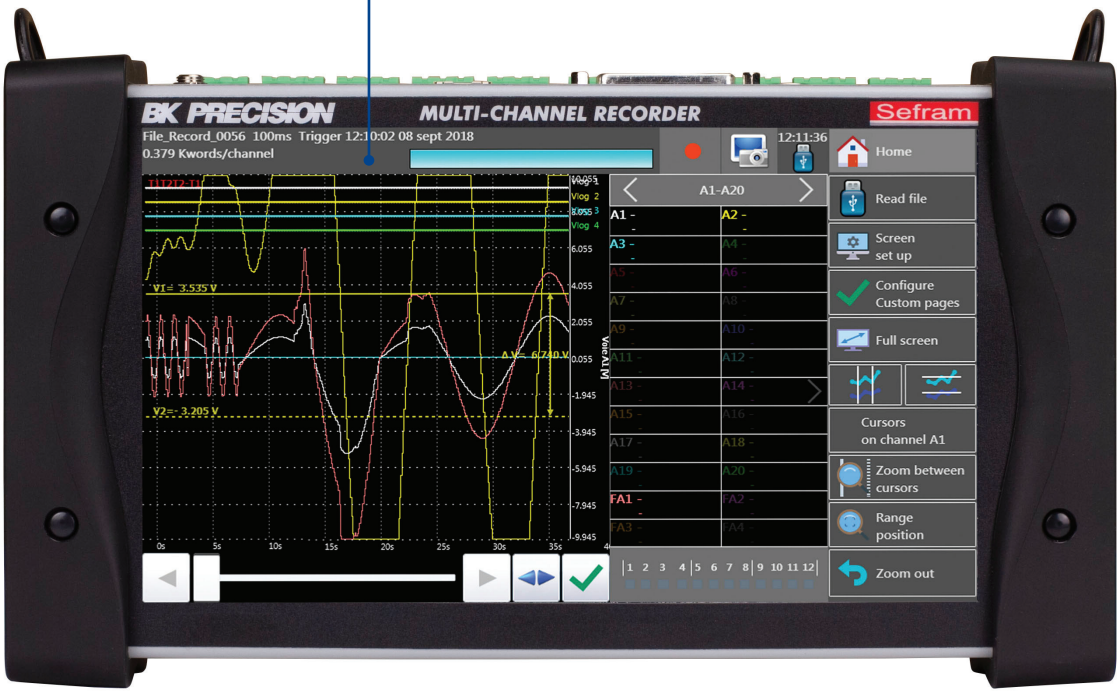
10 universal analog channels are integrated for portability

Features and benefits:

- Wide 10-inch touchscreen TFT display
- 10 built-in universal analog inputs
- Extended battery life of up to 15 hours
- Versatile temperature measurements supporting thermocouples and Pt100 / Pt1000 temperature sensors
- Measure voltage to ±100 V, resistance to 10 kΩ and current (with optional shunt input-terminal block)
- 16-bit vertical resolution
- Recording interval (sampling rate) up to 1 ms
- 12 logic input/output channels
- 4 timing logic input channels for pulse count, frequency and PWM measurements
- 4 alarm outputs
- 32 GB internal solid state memory
- 2 USB Host ports and 1 LAN interface
- Free DasLab operating software
- Virtual Networking Computing (VNC) capability for replicating the instrument's front panel interface on a PC

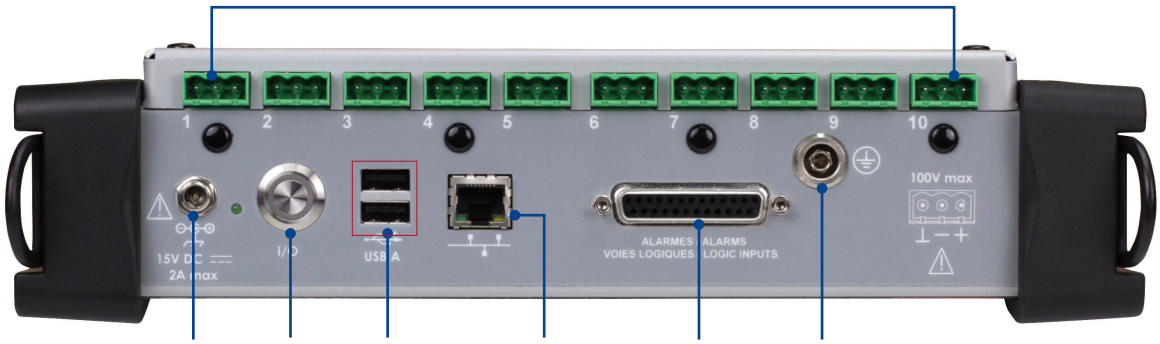
Front panel

10” Touchscreen
TFT display with 10 inch touchscreen to facilitate signal viewing and analysis



Top input and connection panel

Analog channels
Multiplexed analog channels for logging voltage, temperature, and current.



DC power

Power button

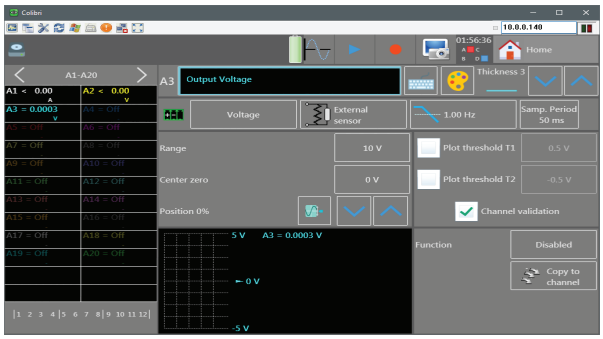
USB host
Save or load configuration and data acquisition files

LAN
Remote control and monitoring

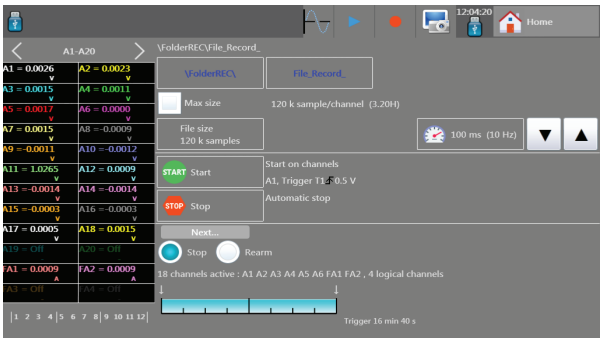
Alarm output/ Logic input
Pulse counter and frequency measurements

Ground

Flexible operation

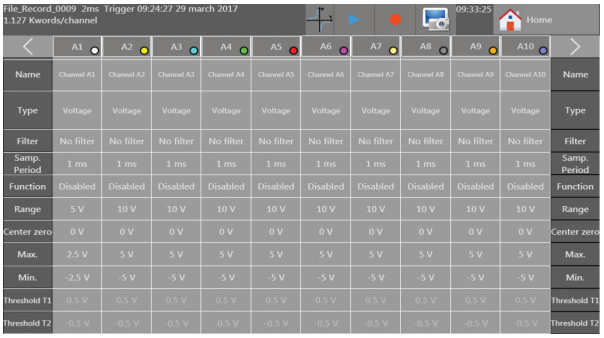


Large display with icon-driven menus for easy setup and operation.

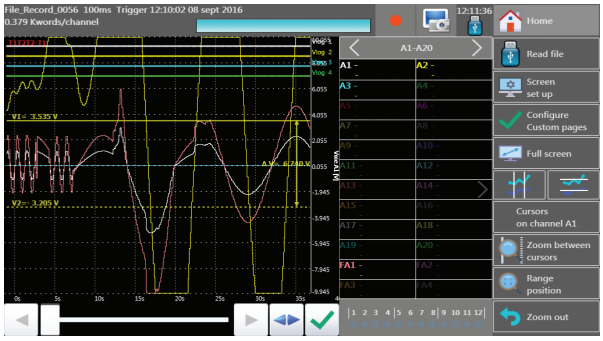


Comprehensive triggering capabilities: Configure triggers on analog and logic channels. Select from multiple combinations of thresholds, channels and conditions.

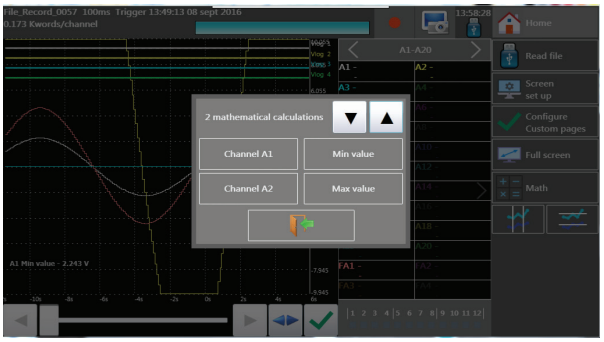
Numerical display of measured values



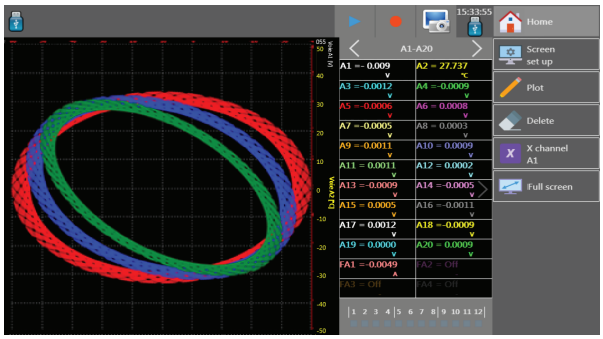
Channel setup displays all parameters on a single screen



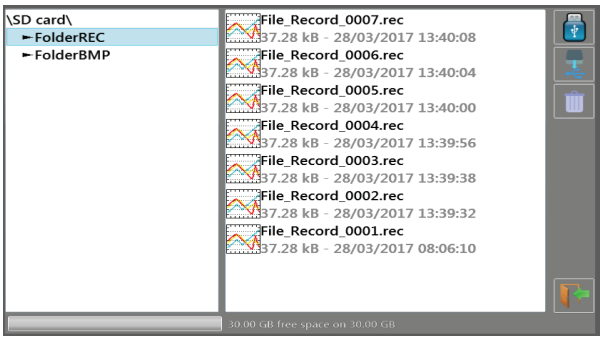
Measurement display with zoom and cursors



Math calculations between channels



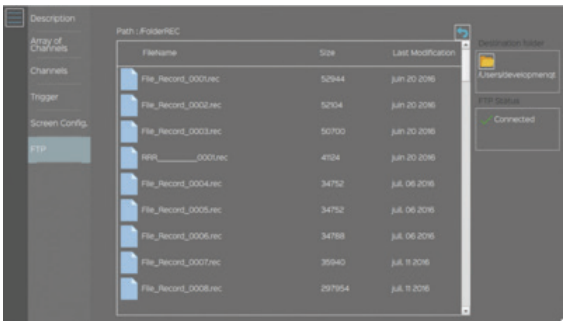
XY mode for plotting one varying voltage versus another



Internal file management

The tools you need

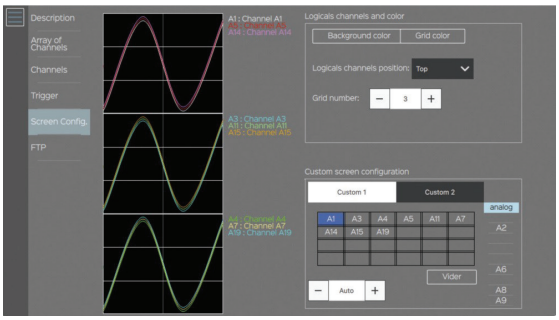
DasLab software



DasLab file management

DasLab is a license-free Windows compatible software that can be downloaded from www.bkprecision.com. The software controls the recorder through the LAN interface and provides the following features:

- Channel and trigger configuration
- Display live measurement results in graphical or numerical format
- File management, file upload and download of data recordings, screen captures and configuration files



DasLab remote setup

Virtual Network Computing (VNC) capability

The recorder's built-in VNC capability, based on the Remote Frame Buffer protocol (RFB), provides a graphical desktop sharing system to remotely control the instrument from another computer. VNC is platform independent and provides a means to control all functions of the instrument through a graphical interface replicating the instrument's front panel using a mouse and keyboard.

Optional accessories

The 50 Ω shunt can be used on any channel of the DAS220-BAT to accurately measure, display, and record the output from 4 to 20 mA current loop sensors.

Rugged carrying case

Analog input connectors I0 pack

Logic channels patch cord

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.

Analog Channels		
Analog Input Channels	10 integrated channels	
DC Voltage		
Ranges	± (0.5, 1, 2.5, 5, 10, 25, 50, 100) mV ± (0.5, 1, 2.5, 5, 10, 25, 50, 100) V	
Maximum input Voltage	100 V DC	
Accuracy	0.1% of the full scale ±10 µV	
Temperature with Thermocouples		
Sensors Range by Type (Cold junction compensation: ±0.5 °C)	J	-210 °C to 1200 °C
	K	-250 °C to 1370 °C
	T	-200 °C to 400 °C
	S	-50 °C to 1760 °C
	B	200 °C to 1820 °C
	E	-250 °C to 1000 °C
	N	-250 °C to 1300 °C
	C	0 °C to 2320 °C
	L	-200 °C to 900 °C
Temperature with Pt100 and Pt1000		
Current	1 mA (Pt100), 100 µA (Pt1000)	
Range	-200 °C to 850 °C	
Measurements	2 and 3 wires	
Accuracy (at 20 °C)	0.3 °C ±0.1% of reading	
Compensated Resistance	2 wires	30 Ω max.
	3 wires	50 Ω max.
Resistance		
Ranges	1 kΩ and 10 kΩ	
Accuracy	1 Ω (range 1 kΩ) and 10 Ω (range 10 kΩ)	

Logic Channels	
Logic Input/Output	
Number of Channels	12
Maximum Permitted Voltage	24 V Cat I
Input Impedance	4.7 kΩ
Sampling Rate	1 ms max.
Timing Input	
Number of Channels	4 (K1 to K4)
Maximum Permitted Voltage	24 V Cat I
Input impedance	4.7 kΩ
Sampling Rate	1 ms max.
Pulse Counter	0 to 10 Million, accuracy 1 ppm
Frequency Measurement	1 Hz to 10 kHz, accuracy 0.1%
PWM Measurement	100 Hz to 2 kHz, accuracy 0.1%
Alarm Output	
Number of Channels	4 Alarms (A, B, C, D)
Output Level	0 to 5 V

Acquisition System		
Resolution	16 bit	
Acquisition System	Scan, one sample per channel	
Sampling Interval	V >50 mV	1 ms to 20 min
	V ≤50 mV, thermocouples and Pt100 / Pt1000	2 ms to 20 min
Trigger	Date, delay, threshold, combination of thresholds (and/or), word on logic channels (and, or, slope, level)	
Pre-trigger	Variable from 0 to 100k samples	

General	
Internal Flash Drive Size	32 GB
Maximum File Size	2 GB
Operating Temperature	0 °C to 40 °C, 80% RH (no condensation)
Storage Temperature	-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	15 hours with standby mode, 10 hours without stand-by mode
Safety	Cat I 100 V, according to IEC61010-1
Weight	3.3 lbs (1.5 kg)
Dimensions (W x H x D)	2.6" x 11.7" x 6.9" (66 x 298 x 176 mm)
Warranty	Two Years
Supplied Accessories	Main adapter 100 / 240 V, manual (CD-ROM), 25 pin male connector(1) and backshell, 10 input connectors, shoulder strap, stylus, soft wipe, and screwdriver

Order Information for Optional Accessories	
902401050	Analog input terminal blocks 20 pack
902408000	Rugged carrying case
902407000	Logic channels patch cord
902406500	4 to 20 mA / 50 Ω shunt
902409000	19" rack-mount kit

(1) User configurable with solder cups.