Data Sheet

Portable 10-Channel Data Recorder
DAS220 Series



The DAS220 is a portable and rugged datalogger for performing measurements virtually anywhere. With 10 universal inputs and convenient screw terminals, the DAS220 makes it easy to measure common process parameters including voltage, current, temperature, pressure, and more. The DAS220 also provides 12 digital inputs, 4 timing inputs, and 4 alarm outputs for process monitoring applications.

Featuring a 10-inch touchscreen display and intuitive user interface with large icons, it is easy to configure channels and view measurement data. The convenient channel setup menu displays the settings for all 10 channels including measurement type and scaling. To view live data, select from numerical, time-series graph, or X-Y plot display setup modes.

The DAS220 is ideal for acquiring and storing data over extended periods of time. Data is saved in the internal memory and can be transferred to an external USB flash drive. When equipped with the optional internal battery, the DAS220 can log data for up to 15 hours without connecting to external power.

The DAS220 also provides ethernet connectivity and LabVIEW™ drivers for remote configuration, instrument control, and viewing data. Free PC operating software is also available for viewing acquired data and file conversions.

Applications

- Temperature logging with thermocouples and platinum resistance temperature sensors
- Voltage measurements from ± 0.5 mV to ± 100 V (CAT I 100 V)
- 4-20 mA 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

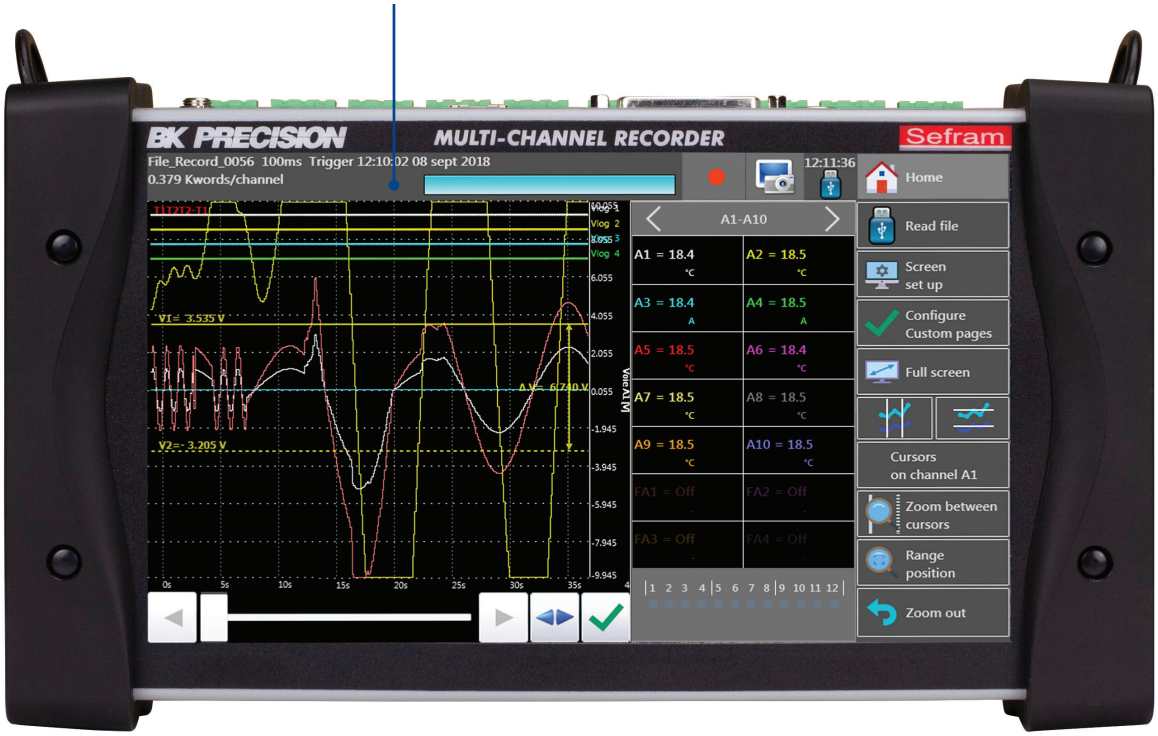
Features and benefits:

- Wide 10-inch touchscreen TFT display
- 10 built-in universal analog inputs
- Extended battery life of up to 15 hours (-BAT)
- Versatile temperature measurements using 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 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
- Available LabVIEW™ drivers
- Virtual Networking Computing (VNC) capability for replicating the instrument's front panel interface on a PC

Technical data subject to change
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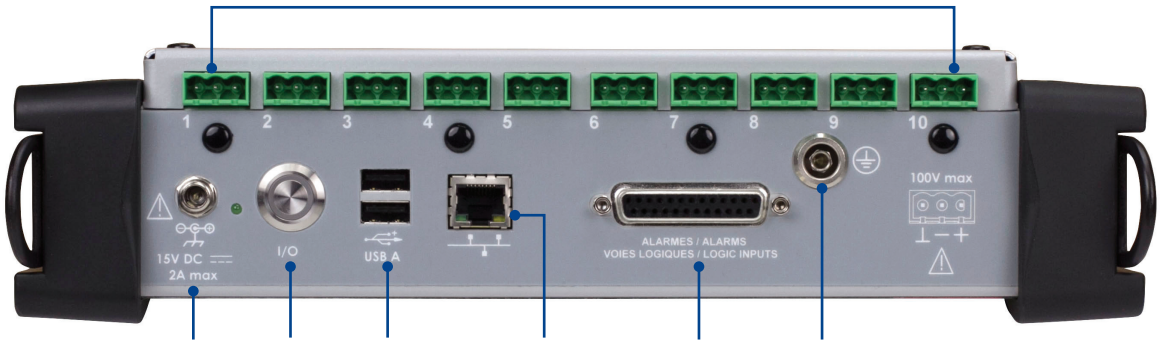
Front panel

10” Touchscreen
10-inch touchscreen display with intuitive and easy to use interface



Top input and connection panel

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



DC power

Power button

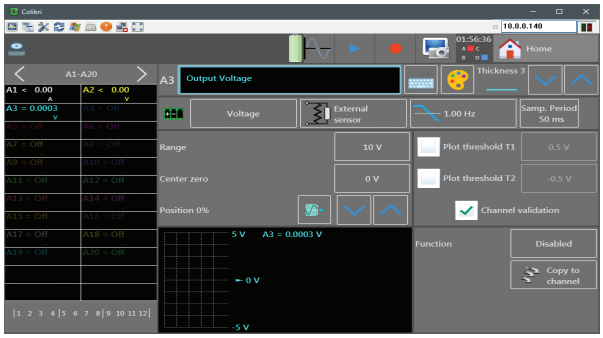
USB host
Save or load configuration and data acquisition files

LAN
Remote control and monitoring

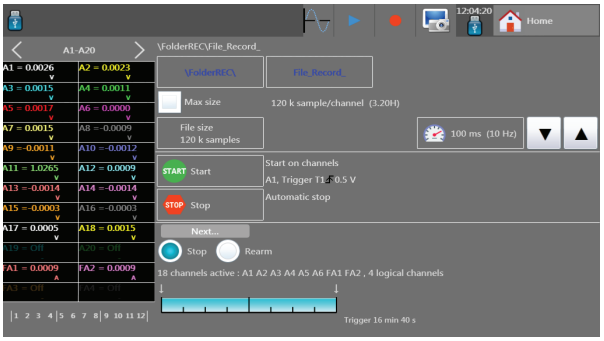
Alarm output/ Logic input
Pulse counter and frequency measurements

Ground

Flexible operation



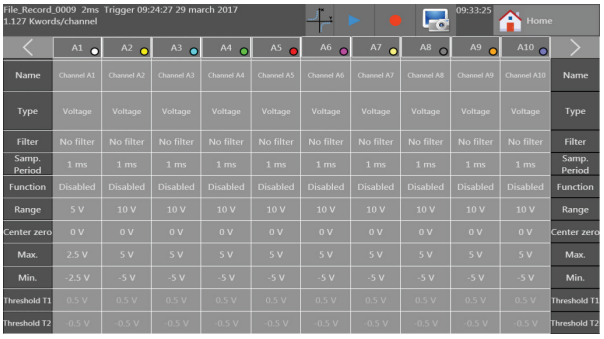
Large display with icon-driven menus for easy setup and operation.



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



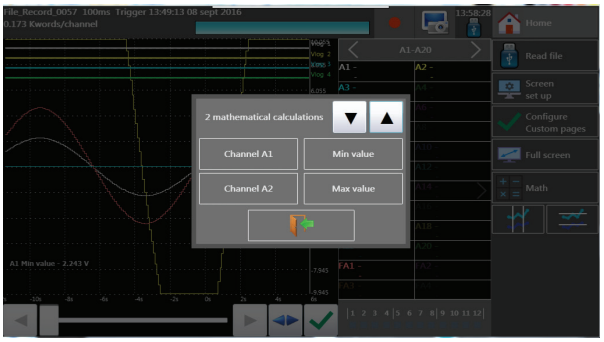
Numerical display of measured values



Channel setup displays all parameters on a single screen

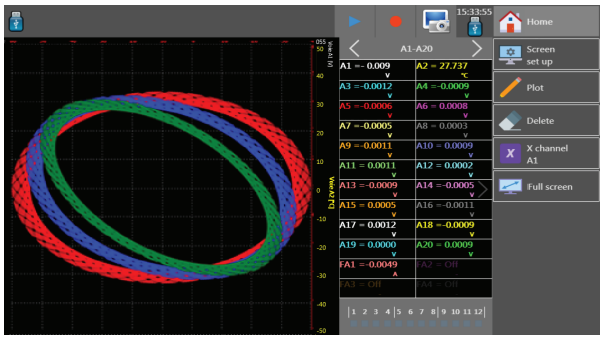


Measurement display with zoom and cursors

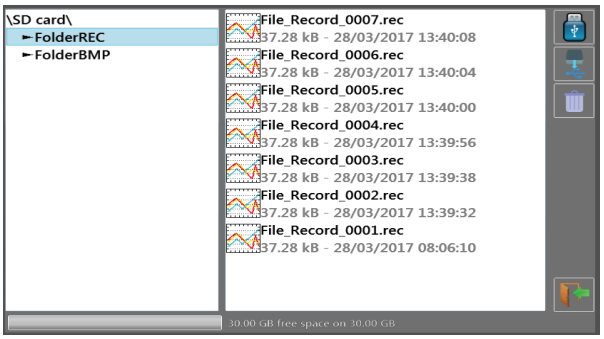


Math calculations between channels

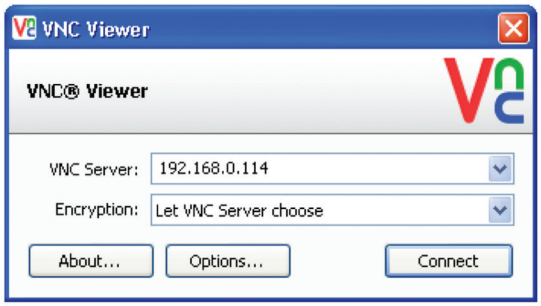
Flexible operation

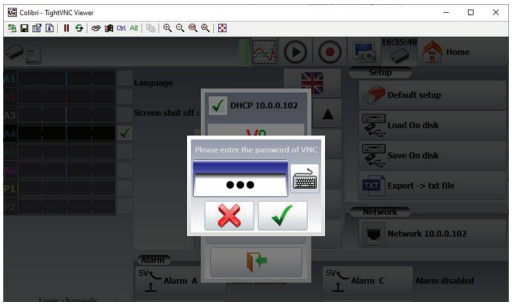


XY mode for plotting one varying voltage versus another



Internal file management





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.

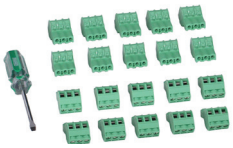
Optional accessories



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



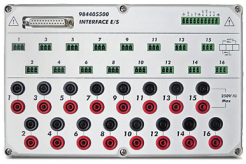
Rugged carrying case



Spare analog input connectors
20 pack



Logic channels patch cord



Isolated logic channel module

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 universal input 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
	R	-40 °C to 1500 °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)	0.4 °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 0.1%
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, edge, threshold, combination of thresholds (and/or), word on logic channels (and/or)	
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 (-BAT)	Non removable, Lithium-ion
Typical Battery Life (-BAT)	15 hours with standby mode, 10 hours without stand-by mode
Safety	Cat I 100 V, according to IEC61010-1
Weight	DAS220 / 3.3 lbs (1.5 kg)
	DAS220-BAT / 4.5 lbs (2 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, 25 pin male connector(1) and backshell, 10 input connectors, shoulder strap, stylus, soft wipe, screwdriver, calibration certificate and test report

Order Information for Optional Accessories	
902201000	DIN mount kit
902401050	Analog input terminal blocks 20 pack
902406500	4 to 20 mA / 50 Ω shunt
902407000	Logic channels patch cord
902408000	Rugged carrying case
902409000	19" rack-mount kit
902409500	US Mains power adapter
978553000	EU Mains power adapter
984405500	Isolated logic channel module

(1) User configurable with solder cups.

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
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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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