Data Sheet

Portable Multi-Channel Recorder
Model DAS240-BAT

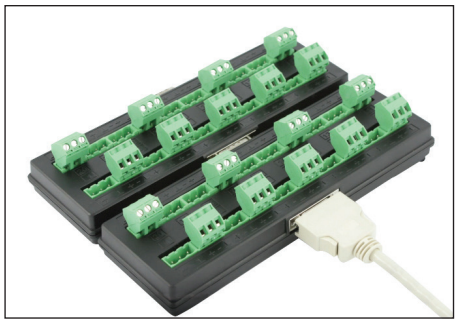


The DAS240-BAT measures parameters commonly found in process applications including voltage, temperature, current, resistance, frequency and pulse. It includes 20 universal analog channels with convenient screw input terminals that can be expanded up to 200 channels. This recorder was developed by B&K Precision's subsidiary Sefram in France, which specializes in the design and manufacture of recorders, field strength meters and other test and measurement instruments.

Measurement results can be viewed graphically and numerically on a 10 inch color touchscreen and saved to internal memory or an external USB memory stick. 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.

Main applications

- Temperature monitoring 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)



Expandable 20-channel analog modules

Features and benefits:

- Compact and portable form factor suitable for remote and field use
- Outstanding battery life of up to 15 hours
- Wide 10" touchscreen TFT display
- 20 universal analog input channels, expandable to 200 channels
- Versatile temperature measurements supporting 9 types of thermocouples and 2 or 3-wire 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 hard drive
- 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

Technical data subject to change
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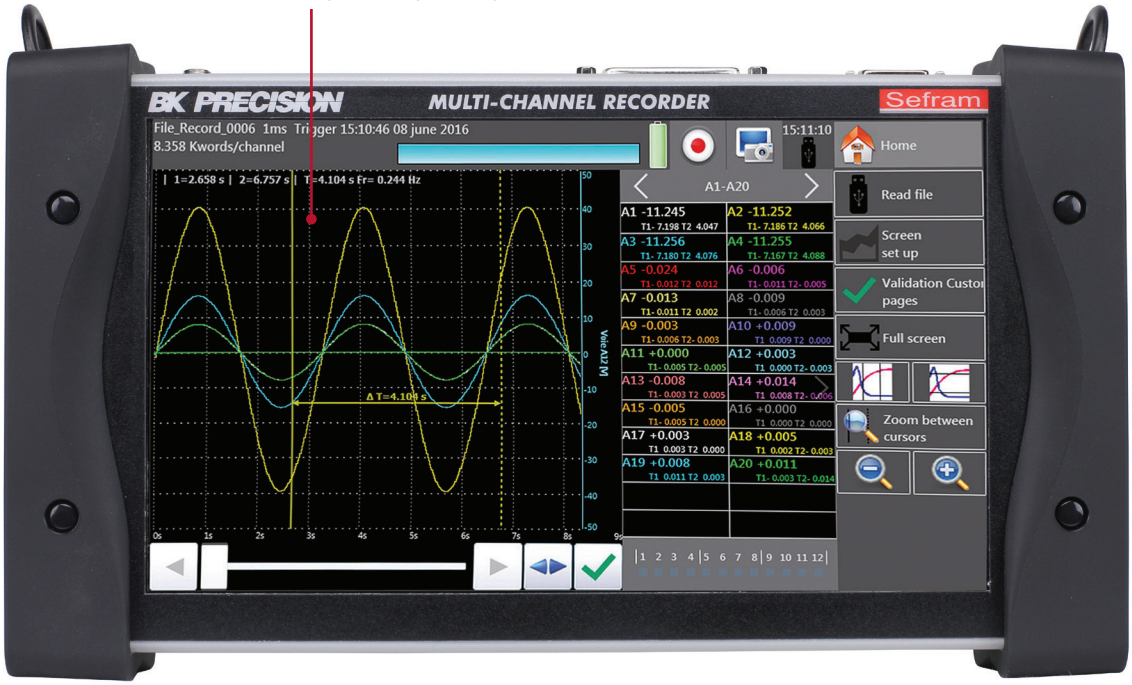
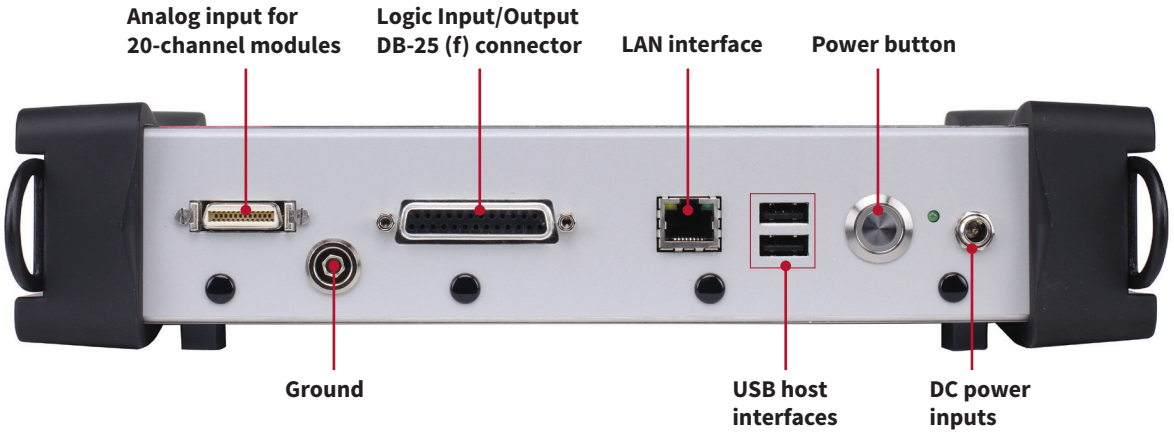
Front panel

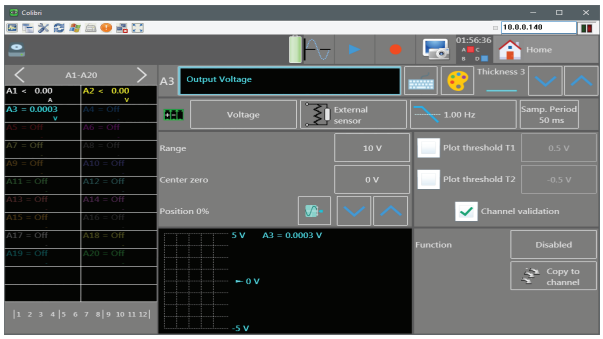
10” Touchscreen
TFT display with 10 inch panoramic touchscreen to facilitate signal viewing and analysis



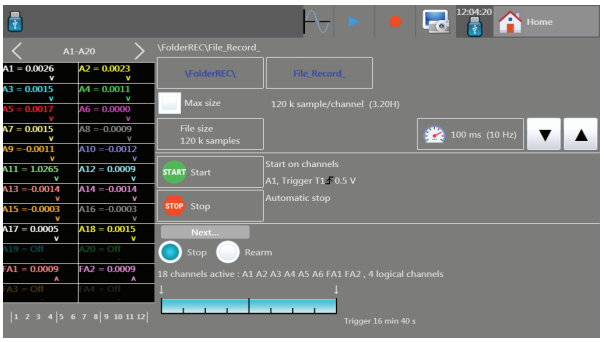
Top input and connection panel



Flexible operation



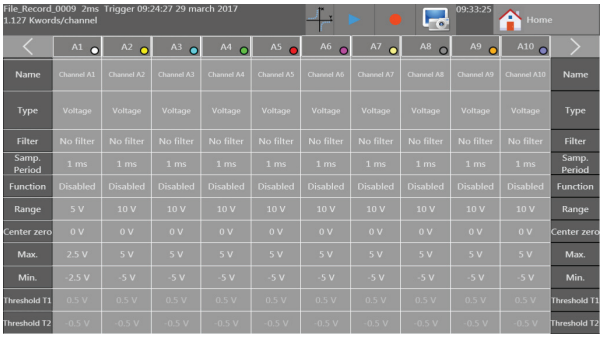
Large display with icon-driven menus for easy setup and operation.



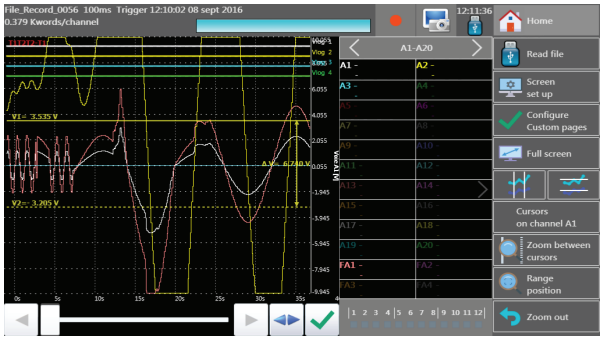
Comprehensive triggering capabilities: Configure triggers on analog and logic channels. Select from multiple combinations of thresholds, channels and conditions.



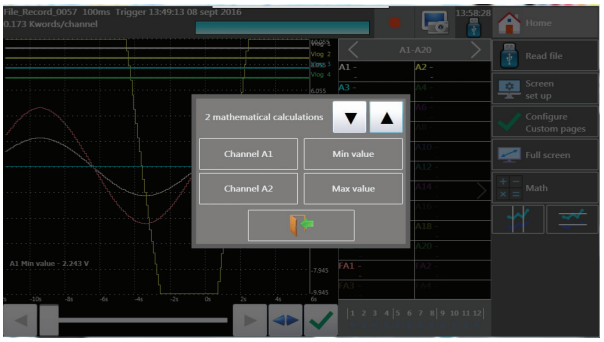
Numerical display of measured values



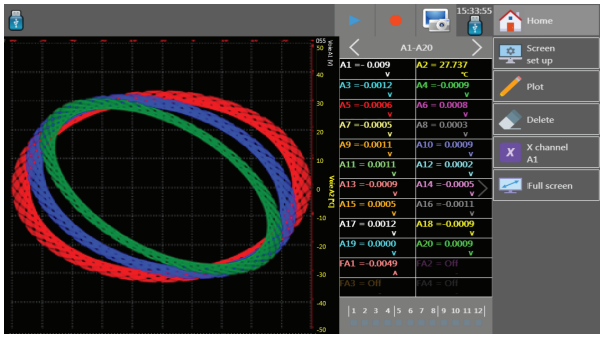
Channel setup displays all parameters on a single screen



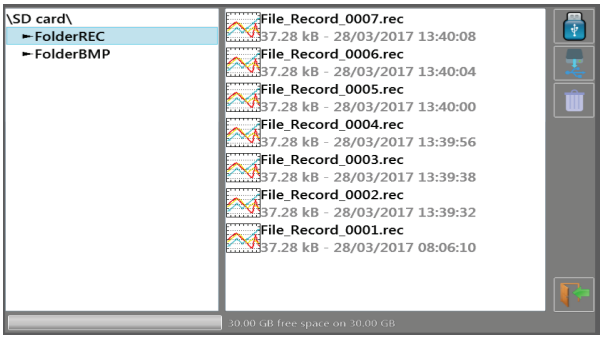
Measurement display with zoom and cursors



Math calculations between channels



XY Mode for plotting one varying voltage versus another



Internal File management

The tools you need

Expandable up to 200 analog channels



The DAS240-BAT provides a flexible and scalable analog channel concept. Each unit is supplied with one 20-channel analog module and 20 screw input terminal blocks, enabling voltage and temperature measurements with thermocouples or Pt100/Pt1000 sensors. By stacking and daisy-chaining additional modules, the total number of channels can be incremented by 20 to a maximum of 200 channels (10 modules).



Adding an optional 50 Ω (0.01%) shunt input terminal block to any 20 channel module provides current measurement capabilities, ideal for 4-20 mA measuring and monitoring applications.

Virtual Network Computing (VNC) capability

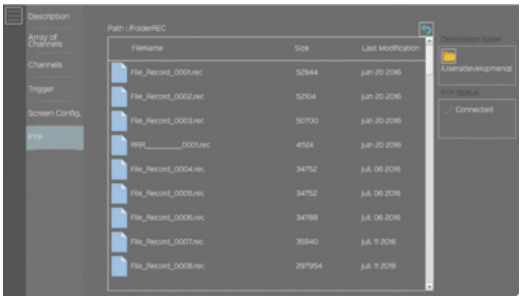
The recorder's built-in VNC capability, based on the Remote Frame Buffer protocol (RFB), provides a graphical desktop sharing system to remotely control the instrument from another computer. VNC is platform independent and provides a means to control all functions of the instrument through a graphical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

DasLab Software

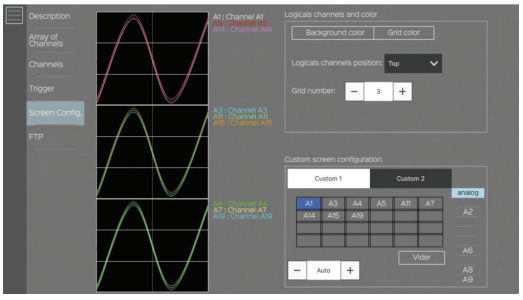


DasLab is a license-free Windows compatible software that can be downloaded from www.bkprecision.com. The software controls the recorder through the LAN interface and provides the following features:

- 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 file management



DasLab remote setup

Specifications

Analog Channels		
Number of Analog Input Channels		
20 channels standard, expandable to 200 with optional 20-channel modules		
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 10000000, 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

General		
Acquisition System		
Resolution	16 bit	
Acquisition System	Scan, one sample per channel	
Sampling Rate	V >50 mV	1 ms to 20 min
	V ≤50 mV, thermocouples and Pt100 / Pt1000	2 ms
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	
Internal Storage		
Internal Flash Drive Size	32 GB	
Maximum File Size	2 GB	
Environmental		
Operating Temperature	0 °C to 40 °C, 80% RH (no condensation)	
Storage Temperature	-20 °C to 60 °C	
Auxiliary		
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), 1 male connector with 25 pins male and cover, 1 cable (70 cm) for measurement module connection, 1 measurement module (20 channels) with input terminals, a stylus, a soft wipe, a screwdriver	

Order Information for Optional Accessories	
902401000	20-channel module
902401050	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