

# High Speed Modular Data Acquisition Recorder DAS1800



With 10 slots for input modules, the DAS1800 can be configured for a wide variety of applications. Choose from 3 input modules with 4 or 8 channels each to achieve the optimal channel configuration. Acquire data from any sensor with a voltage or current output (with shunt), or directly measure voltage, resistance, or temperature using thermocouples or resistance temperature detectors (RTDs).

For capturing rapidly changing signals and transients, the DAS1800 can simultaneously measure and record up to 40 channels at I MSa/s/ch and stream the data directly to the solid-state drive. For slow changing parameters, the D18-MUX8 multiplexed module provides 8 inputs per module (up to 80 channels per system).

With four configurable sampling rates and advanced triggering options, the DAS1800 can record trends at low sample rates and transients at higher rates. It also comes with a 2 TB solid-state drive standard, providing the longest recording time of any data acquisition recorder on the market. To gain portability, you don't have to give up features and performance with the DAS1800. Weighing about 15 lbs (6.8 kg), the battery configured base unit is the lightest all-in-one system in its class. Modules are also lightweight, only adding around 1.2 lbs (0.55 kg) each. The DAS1800 features a large 15.6" Full HD touch screen display for easy setup and visualizing real-time or recorded data, and the optional internal battery provides up to 3.5 hours of battery operation (1.5 hours with 10 D18-UNI4 modules) for testing in the field.

The highly intuitive user interface of the DASI800 makes it easy to use with a multitude of time saving features such as one finger scrolling, pinch and zoom, and a built-in sensor library. The DASI800 also provides several options for visualizing your measurement data. View measurements as real-time waveforms and numeric values on customizable dashboards.

For viewing data on a PC, download our free DASpro software. For remote control, the DAS1800 supports web server and VNC connections.

#### Features and benefits:

- Stream 40 channels at I MSa/s/ch
- Up to 80 analog inputs with D18-MUX8 multiplexed module
- Measure up to ± 600 VDC
- I0 slots and 3 measurement modules available
   Universal (4 ch)
  - Multiplexed (8 ch)
  - High Impedance (4 ch)
- Temperature measurements with thermocouples and RTDs
- Store sensor information and parameters in the sensor library
- Simultaneous recording at multiple sample rates (up to 4)
- Internal signal conditioning with analog and digital filters
- 15.6" Full HD touchscreen display
- 2 TB internal SSD (standard)
- Advanced calculations and automatic measurements
- Battery option (up to 3.5 hours of operation)
- I6 digital input channels (24 V) and 4 digital outputs
- Dedicated power outputs for sensors with +3.3 V, +5 V, +12 V, or +24 V excitation voltages
- Interfaces include USB 3.0 (x2), USB 2.0 (x2), LAN I Gbps (xI), and HDMI (xI)
- Rugged carrying case included

#### Applications

- Measure and record up to 80 analog channels
- Monitoring of processes and equipment
- Product validation and verification

High Speed Modular Data Acquisition System DAS1800

#### **Front panel**





#### **Rear panel**

**Digital inputs & outputs** Provides I6 digital input channels and 4 digital outputs

> Synchronization input SUB-D I5 HD pin terminal provides start/stop, trigger, and sampling input and outputs



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**Power supply outputs** Dedicated outputs provide 3.3 V, 5 V, 12 V, and 24 V with maximum 500 mA

#### **Top panel**

Standard 10 module slots Easily configure system with plug & play modules



Image displays a DAS1800 configured with 3 universal modules and 3 multiplexed modules.

**USB host ports** 

LAN Dual LAN ports for remote control and monitoring

**HDMI output** Mirror the DAS1800 screen to an external monitor

**Power button** 

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#### **Operation highlights**

#### **Channel configuration**



The channel configuration menu offers an intuitive design to ease measurement setup. The connection diagram changes to display wiring information for the measurement type and sensor selected.

#### Advanced triggering



Configure the trigger settings to start and stop acquisition manually, at a specified time, or through a combination of one or multiple channel(s).

#### **Custom dashboards**



Measure and visualize data as real-time waveforms and numeric values on a customizable dashboard. Import circuit diagrams or system images to display on the dashboard.

#### Waveform measurements



Automatically calculate up to 19 different waveform measurements including, amplitude, RMS, mean, frequency, rise time, and fall time.



Reduce unwanted noise with built-in analog and digital filters. Analog filters include 100 Hz, 1 kHz, and 10 kHz low-pass filters. Digital filtering includes a user-definable low pass filter between 10 mHz to 10 kHz.

#### Simultaneous recording

🖻 🏫 HOME	CONFIGURATIO	ON (Pe I	EALTIME	RECORDINGS	FILE MANAGER	😑 START RI		o 🖽 i	ê 🚺
Measurements realtime	CHANNELS			📑 REMOTE	MPORT EXPOR	r 🔯 system			
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Ch_A2 Med	Trigger								•
Ch_A3 Mea					Freq	Freq	Freq	Freq	
Ch_A4 Millia	Ne into								
Ch_B1				Max, Freq 🕐				Recording frequency 2:50	Hz (4ms)
÷					Baudrate 2M Dytes/s 90%	Baudrate 200k Dytee/s 9.0% Select / Unselect all	Beudrate 10k Dytes/s 0.45%	1MHz (1µs) 100kHz (10µs)	
					<b>2</b>				M
		Ch,A2				<u>~</u>			
		Ch_A3					<b>S</b>		
		Ch_A4						2	
		Ch_81							
									c >
Alarms A 0 8 0 C 0 D 0		Overlay: 1	lot optimized recor	ding frequency 🥑					

Record data at up to 4 different user configurable sample rates simultaneously. Allocate channels to slower rates or higher rates on a per channel basis for efficient use of hard drive space.

#### Filtering

High Speed Modular Data Acquisition System DAS1800

#### The tools you need

#### Sensor library

**DASpro (PC software)** 



The DAS1800 provides a library of common sensor configurations to facilitate channel setup. Users can also add to the library by creating a new sensor with user-defined parameters including, name, units, and conversion function.

#### 2 TB SSD

2	A HOME	CONFIGURATION	Po REALTIME	🕅 RECORDINGS	DI RLEM	ANAGER	START RECORDING	o 🗈 â	Ê
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		23_09_12_18_49_17_							
φ usa		23_09_12_18_52_42_	420.bmp			12 Sep 2023 18:52:42			
		23_09_12_19_14_59_							
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		23_09_12_19_15_18_	300.bmp			12 Sep 2023 19:15:18			
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		23_09_12_20_15_03_							
		23_09_12_23_20_16_							
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								03. 84.09 MR/884 94 GR	
No acqui	isition running							12 Sep 2023 18:	57:06

The DAS1800 provides the longest recording time of any data acquisition on the market with a 2 TB solid state drive that comes standard. Store waveform recordings, configuration files, and screenshots.

#### **Remote connectivity and PC software**



The DASpro software is a license free software that can be downloaded from bkprecision.com. Using this software, users can open and view the universal ASAM MDF4 file recordings saved by the DAS1800. Viewing data and analysis features are similar to the DAS1800, making it easy and intuitive to operate.

#### Web server

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		0.00.107/cm-US	*/conf/frequencyGroup								18 6		•	
A HOME	2 CON								START RECORDING					
🐱 CHANNELS		een Reco	xaos 💽	REMOTE	IMPORT EXPORT	😨 SYSTEM								
Sampling freq	¥=	Color, Name, N	feasurement_Type, Max,										0	
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		iverlay: Not opt	imized recording freque	म्म <b>ि</b>										

The DAS1800 provides an internal web server for remote access through any device on the same network. Configure instrument channels and trigger parameters, initialize acquisition, and easily save and transfer files to a local storage system.

# Virtual Network Computing (VNC) capability

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

#### File Transfer Protocol (FTP)

Access remotely the internal hard drive of the recorder to drag and drop the recording files into your desktop.

High Speed Modular Data Acquisition System DAS1800

#### **Measurement Modules**

Configure the DAS1800 to fit your needs with any combination of modules up to 10.

Universal Module	CATE GOINT CATE UNIVERSELLE
High Impedance Module	CATE GOVY BAX CATE GOVY CATE UNIVERSELLE HAUTE INPEDANCE CATE UNIVERSELLE HAUTE INPEDANCE
Multiplexed Module	CARTE RULTIPLEXEE $\bigcirc \bigcirc$ FULTIPLEXED BOARD $\frown$ $1 - 2 - \bigcirc$ $\bigcirc$ $1 - 4 - \bigcirc$ $5 - 6 - \bigcirc$ $7 - 8 - \bigcirc$ $\frown$ $1 - 2 - \bigcirc$ $\bigcirc$ $1 - 1 - 2 - \bigcirc$ $\bigcirc$ $1 - 1 - 4 - \bigcirc$ $0 - 5 - 6 - \bigcirc$ $\bigcirc$ $0 - 7 - 8 - \bigcirc$ $\frown$ $1 - 1 - 2 - \bigcirc$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 1 - 1 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0 - 0$ $\bigcirc$ $0 - 0 - 0$

Measurement Modules							
	Universal	High Impedance	Multiplexed				
Channels	4	4	8				
Maximum Voltage	± 600 VDC	± 600 VDC	± 48 VDC				
RMS Voltage	424 VRMS	424 VRMS	-				
Resolution	l6 bit	I6 bit	I8 bit				
Sampling Rate	I MSa/s/ch	I MSa/s/ch	5 kSa/s				
Input Impedance	ΙΜΩ	I0 MΩ	2 ΜΩ				
Input Type	Single ended	Single ended	Differential				
Isolation	$\checkmark$	$\checkmark$	-				
Voltage	$\checkmark$	$\checkmark$	$\checkmark$				
Current	$\checkmark$	$\checkmark$	$\checkmark$				
Thermocouples	$\checkmark$	$\checkmark$	$\checkmark$				
RTDs	-	-	$\checkmark$				
Frequency	$\checkmark$	$\checkmark$	-				
Counter	$\checkmark$	$\checkmark$	$\checkmark$				
PWM	$\checkmark$	$\checkmark$	-				

#### Included accessories



Bare wire to banana adapter<sup>1</sup> (Set of 4 pairs)



SUB-D 25 pin connector for digital inputs and alarms



4 pin screw terminal block<sup>2</sup> (Set of 8),



SUB-D I5 HD pin connector for timing and synchronization I/O



Rugged case

8 pin screw terminal block for power rail supply

(I) A set of bare wire to banana adapters is provided with every universal and high impedance module purchased. (2) A set of 4 pin screw terminal blocks is provided with every multiplexed module purchased.

#### **Optional accessories**



Digital channel patch cord



Isolated digital channel board

**Specifications, base unit** Note: All specifications apply to the unit after a temperature stabilization time of 30 minutes over an ambient temperature range of 23 °C  $\pm$  5 °C.

Data Acquisition System						
Recording (files written to SSD)						
Max Sampling Rate	I MSa/s up to 40 channels					
Recording Groups		4				
Write Speed		120 MB/s (7 GB/min)				
File Format		ASAM MDF4 (.mf4)				
File Size Limit		90% of disk capacity				
At End of Acquisition		Notify, rearm trigger				
Real Time Measure						
	F(t)	Roll mode: 100 ms/div to 10 min/div Scope mode: 10 µs/div to 50 ms/div				
Display Mode	DMM	Acquisition time: 200ms (I0 NPLC <sup>2</sup> at 50Hz), 2s (I00 NPLC <sup>2</sup> at 50Hz)				
	Record live view	Typical Refresh period 2s, Zoom Mode				
	Custom	2 Customizable Views Widgets: F(t), RecLive F(t), DMM, Picture				
File Viewer	1					
Open File Time (typical)		10 sec per 100 GB of file				
Subplot		16				
Cursors		Horizontal, vertical				
Magguraments	On th	e data displayed or between cursors				
Measurements	Min, Max	, Pk to Pk, Frequency, RMS, Rising time				
Trigger System						
Compute Period		l µs				
Source	Analog cha del AND/C	annel, external source, manual, date/time, elay (on start), duration (on stop), OR combination of channels (128 max)				
On Analog Channel	Edge (rising, falling, both), Threshold (above, below), windows (in, out)					
Pre-trigger		I28 Msamples				
Post-trigger	1000 s maximum					

Digital I/O					
Input					
Number of Channels	16				
Max Voltage	24 V				
Threshold	1.2 V to 2.8 V				
Sampling Interval	I μs (I MSa/s) each channel				
Output					
Number of Channels	4				
Output Characteristics	TTL 5 V, 10 mA				
Trigger Source	Analog/Digital channels, acquisition start/stop, disk full				
Power Supply <sup>3</sup>	+ 12 V ± 5 %, 200 mA				

(I) For D18-UNI4 and D18-HIZ4 Module

(2) NPLC: Number of power line cycles(3) Used to power the isolated digital input board(4) Time with only the 1st frequency group used

Power Supply Outputs							
Maximun	n Power Consu	mption	5 W				
			+ 3.3 V ± 5%, 500 mA				
Output Characteristics			+ 5 V ± 5%, 500 mA				
			+ 12 V ± 5%, 400 mA				
				+ 24 V ±5 %, 200 mA			
		Sv	nchroniza	ation I/O			
On Sync	hronization C	onnect	or (SUB-D 1	5 HD pin)			
	Signal leve	1		TTL 3.3 V			
Input	External trigg	ger	Pull-up re M	sistor: 10 k $\Omega$ , Rising edge sensitive inimum pulse width: 100 $\mu$ s			
mput	External start/stop	F	Pull-up resisto Fa Mi	r: 10 k $\Omega$ , Rising edge sensitive for start lling edge sensitive for stop nimum pulse width: 500 ms			
	Signal			TTL 3.3 V			
Output	Trigger		l m	s positive pulse at trig event			
	Start/stop		S	et when record is launched			
		S	oftware F	eature			
			VNC for r	emote monitoring and control			
				Web server			
Remo	ote Access	File m	nanagement	FTP, SFTP			
		Bench	automation	SCPI command port (23 or 5025)			
Senso	or Library		Predefined sensors and user created				
Date	and Time			Manual, NTP			
Softwa	are Update		Through web or USB				
Lar	nguages		English. French				
	00		General				
Internal	Solid State Me	emory	2 TB SSD 3D TLC NAND				
Oper	ating Temperat	ure	$0 \degree C$ to $40 \degree C$ (32 $\degree E$ to $104 \degree E$ )				
Stor	ave Temperatu	re	-20 °C to 60 °C (-4 °E to 140 °E)				
5.01	Display		15.6" TET LCD full HD 1920x1080				
	Power Supply		10 VAC to 240 VAC 50 to 60 Hz (150 VA max)				
	Interfaces		USB 3.0 (x2), USB 2.0 (x2), LAN I Gbps (x1),				
Ba	ttery (optional)		Non removable. Lithium-ion				
Batt	tery Life (typica	1)	3 ½ hrs	s - One DI8-UNI4 module installed			
	Weight		15 lbs	(6.8 kg) base unit + battery option 1.21 lbs (550 g) each module			
Safety		Low V	oltage Directive (LVD) 2014/35/EU EN 61010-2010+A1:2019				
Electromagnetic Compatibility			EMC directive 2014/53/EU EN IEC 61326-1 (2021) EN 61000-3-2 (2019+A1/2021) EN 61000-3-3 (2013+A1/2019)				
Dimensions (W x H x D)			19.1" :	x II" x 7.9" (485 x 280 x 200 mm)			
	Warranty			3 Years			
Supp	olied Accessori	es	Power cord, shell, SUB shell, 8	SUB-D 25 pin male connector and back -D IS HD pin male connector and back pin connector, rugged carrying case			

#### **Specifications, measurement Modules**

Note: All specifications apply to the unit after a temperature stabilization time of 30 minutes over an ambient temperature range of 23 °C  $\pm$  5 °C.

Universal Module (D18-UNI4)						
Number of Channels			4			
Input Type		input - 4mm Banana Plug				
Voltage						
Max. Input Voltage		± 600 VDC or 424 Vrms				
Range	19 Ranges: ± 500 μV / 1 mV / 2.5 mV / 5 mV / 10 mV / 25 mV / 50 mV / 100 mV / 250 mV / 500 mV / 1 V / 2.5 V / 5 V / 10 V / 25 V / 50 V / 100 V / 250 V / 600 V					
		≤ ± 25 mV	$\pm$ 0.1% of full range + 10 $\mu V^2$			
DC Accuracy <sup>1</sup>	± 2	5 mV to $\pm$ 500 mV	$\pm$ 0.1% of full range + 10 $\mu V$			
		$\ge \pm 1 \text{ V}$	± 0.06% of full range			
Offset Drift		± 50 ppm	$1/^{\circ}C \pm I \mu V/^{\circ}C$			
Input Impedance	IN	$M\Omega$ for ranges $\geq \pm 1 V_{c}$	25 M $\Omega$ for ranges $\leq \pm 0.5$ V			
Input Capacitance		I	50 pF			
		≤ ± I mV	< 0.2%			
Intrinsic Noise <sup>3</sup> (standard deviation in	± 2	$2.5 \text{ mV to} \pm 10 \text{ mV}$	< 0.1%			
% of the span)	± 2	5 mV to $\pm$ 500 mV	< 0.05%			
		$\ge \pm 1 \text{ V}$	< 0.02%			
CMRR		≤ ± 500 mV	> 85 dB			
		≥±IV	> 70 dB			
Crosstalk	> -90 dB					
Isolation	CH to CH and CH to GND, > 100 M $\Omega$ at 650 VDC					
Safety		CAT	III 600 V			
Bandwidth and Filter	s					
		≤ ± 2.5 mV	I kHz			
Bandwidth	±	$5 \text{ mV to} \pm 25 \text{ mV}$	I0 kHz			
(-3 dB)	± 50	$0 \text{ mV to } \pm 500 \text{ mV}$	60 kHz			
		≥±IV	IOO kHz			
Analog Filter	2nd	Order(-20 dB/dec)	100 Hz, I kHz, 10 kHz			
	IIR 4t	h order (-80 dB/dec)	0.01 Hz to 10 kHz			
Digital Filter		Туре	Low-pass			
		Filter	Butterworth			
Data Acquisition			1. CAD			
ADC		l6 b	II – SAK			
Sampling Interval		I µs (I MSa	(s) each channel			
	ocouple	=)	4 mc			
		Incomponented inter-	T IIIS			
Cold Junction			$r_{1}$ (other channel)			
	I	-210 °C to 120	y = 1.23 C			
	K	-210 °C to 120	10 °C (-418 °F to 2498 °F)			
	т	-200 °C to 40	0 °C (-328 °E to 752 °F)			
	s i	-50 °C to 176	0 °C (-58 °E to 3200 °E)			
Туре	B	200 °C to 183	20 °C (392 °E to 3308 °F)			
	F	-250 °C to 102	00 °C (-418 °F to 1832 °F)			
	N	-250 °C to 130	00 °C (-418 °F to 2372 °F)			
	R	-250 °C to 1300 °C (-418 °F to 2372 °F)				

Time and Counting						
Threshold	Set by user, auto					
Duty Cycle	10% minimum – (min	imum pulse width, 20 μs)				
Counter	4	8 bits				
	0.1 Hz	0.1 Hz to 100 kHz				
Frequency	Accuracy: 0.01% reading, 0.1 Hz to 10 Hz 0.05% reading, 10 Hz to 100 kHz					
PWM	Absolute error: 0.1% from 0.1 Hz to 1 kHz 0.5% from 1 kHz to 5 kHz					
TRMS	TRMS					
Compute Period	Compute on the I Ms/s data flow Each period until 100 Hz 10 ms between 100 Hz and 10 kHz					
Accuracy	10 Hz to 2 kHz	± 0.1% of full range				
(Sine wave $\geq$ 1 V)	2 kHz to 10 kHz	± 0.3% of full range				
Other						
Current	Through shunt or clamp					
Sensor	0 to 10 V, 4 to 20 mA (with external shunt), duty cycle or frequency sensor, other user defined settings					
Calculations	Min – max – avg on $\Delta t$					

High Impedance Module⁵ (D18-HIZ4)								
Voltage								
Input Impedance	10 M $\Omega$ for ranges $\geq \pm 1$ V, 25 M $\Omega$ for ranges $\leq \pm 0.5$ mV							
	≤ ± I mV	< 0.2%						
Intrinsic Noise <sup>3</sup>	$\pm$ 2.5 mV to $\pm$ 10 mV	< 0.1%						
% of the span)	$\pm$ 25 mV to $\pm$ 500 mV	< 0.05%						
	≥±IV	< 0.05%						
Bandwidth and Filters	S							
	≤ ± 2.5 mV	I kHz						
	$\pm$ 5 mV to $\pm$ 25 mV	I0 kHz						
Bandwidth	$\pm$ 50 mV to $\pm$ 500 mV	60 kHz						
	$\ge \pm 1$ V to $\pm 10$ V	20 kHz						
	≥ ± 25 V	80 kHz						

(I) Direct measure taken on DMM at I0 (50 Hz) / I2 (60 Hz) NLPC (200 ms) and full bandwidth

(2) Only when offset adjustment has been performed after installing a new module. Otherwise accuracy is  $\pm$  0.1% of full range + 20  $\mu V$ 

(3) Measure  $\pm$  short circuit termination to 50  $\Omega$  on chassis during I sec at the fastest acquisition speed and full bandwidth

(4) Only when cold junction adjustment has been performed after installing a new module. Otherwise accuracy is  $\pm 3$  °C

(5) For all other specs, refer to the universal module specifications

#### **Specifications, measurement Modules**

Note: All specifications apply to the unit after a temperature stabilization time of 30 minutes over an ambient temperature range of 23 °C  $\pm$  5 °C.

Multiplexed Module (D18-MUX8)						
Number of Channels	8					
Input Type	Non-isolated differential input – 4 pin terminal block, Part: Phoenix Contact MC 1.5/ 4-ST-3.5					
Voltage						
Maximum Input Voltage	± 48 VDC between CH to GND and between 2 poles on a channel					
Range (16 ranges)	± 500 μV / 1 mV / 2.5 mV / 5 mV / 10 mV / 25 mV / 50 mV / 100 mV / 250 mV / 500 mV / 1 V / 2.5 V / 5 V / 10 V / 25 V / 48 V					
Admissible Common	$\leq \pm 1 \text{ V}$	± 3 V				
Mode	≥ ± 2.5 V	± 48 V				
	$\leq \pm 10 \text{ mV}$	$\pm$ 0.1% of full range + 5µV				
DC Accuracy	≥ ± 25 mV	± 0.04% of full range				
Offset Drift	$\pm$ 50 ppm/°C $\pm$ 0.5 µV/°C					
Input Impedance	2 M $\Omega$ for ranges $\ge \pm 1$ V, 25 M $\Omega$ for ranges $\le \pm 0.5$ V					
Input Capacitance	150 pF					
Intrinsic Noise <sup>2</sup>	≤ ± I mV	< 0.15%				
(standard deviation in%	$\pm$ 2.5 mV to $\pm$ 10 mV	< 0.05%				
of the span)	≥ ± 25 mV	< 0.01%				
CMRR	> 7	0 dB				
Crosstalk	> -90 dB					
Bandwidth and Filters						
Bandwidth (-3 dB)	I k	кНz				
	IIR 4th order (-80 dB/dec)	0.01 Hz to 500 Hz				
Digital Filter	Туре	Lowpass				
	Filter	Butterworth				
Data Acquisition						
ADC	18 bit – SAR					
Sampling Interval	200 µs (5 kSa/s) each channel					

Temperature (RTD)					
Compute Frequency	4 ms				
Current	PtI00	1.0 mA			
	Pt200	0.5 mA			
	Pt500	0.2 mA			
	Pt1000	0.1 mA			
Temperature Range	-200 °C to +850 °C (-328 °F to 1562 °F )				
Wiring	2 wires	Max. corrective resistance 50 $\Omega$			
	3 wires	Max. 3-wire resistance, 50 $\Omega$			
	4 wires				
Measurement Range (7 Ranges)	± 10 °C, ± 25 °C, ± 65 °C, ± 130 °C, ± 200 °C, [-200 °C, +380 °C], [-200 °C, +850 °C]				
Accuracy	3 wires	0.1% of the range $\pm$ 0.3 °C			
	4 wires	$\pm$ 0.1% of the range $\pm$ 0.2 °C			

(I) Direct measure taken on DMM at I0 (50 Hz) / I2 (60 Hz) NLPC (200 ms) and full bandwidth

(2) Measure  $\pm$  short circuit termination to 50  $\Omega$  on chassis during I sec at the fastest acquisition speed and full bandwidth

Temperature (Thermocouple)					
Compute Frequency	4 ms				
Cold Junction	Uncompensated, internal, external (other channel)				
	Accuracy <sup>3</sup> : ± 1.25 °C				
Туре	J	-210 °C to 1200 °C (-346 °F to 2192 °F)			
	К	-250 °C to 1370 °C (-418 °F to 2498 °F)			
	Т	-200 °C to 400 °C (-328 °F to 752 °F)			
	S	-50 °C to 1760 °C (-58 °F to 3200 °F)			
	В	200 °C to 1820 °C (392 °F to 3308 °F)			
	E	-250 °C to 1000 °C (-418 °F to 1832 °F)			
	N	-250 °C to 1300 °C (-418 °F to 2372 °F)			
	R	-50°C to 1768°C (-58 °F to 3214 °F)			
Resistance					
Compute Frequency		4 ms			
Wiring	2 wires	Max. corrective resistance 50 $\boldsymbol{\Omega}$			
	3 wires	Max. 3-wire resistance, 50 $\Omega$			
	4 wires				
Measurement Range (4 Ranges)	300 Ω (I mA), I500 Ω ( 0.5 mA), 5k Ω (0.2 mA), I0 kΩ (0.1 mA)				
Accuracy	$\pm$ 0.1% of the range $\pm$ 0.1 $\Omega$				
Time and Counting					
Threshold	Set by user, auto				
Minimum Pulse Width	l ms				
Counter	32 bits				
Other					
Current	Through shunt or clamp				
Sensor	0 to 10 V, 4 to 20 mA (with external shunt), other user defined settings				

(3) Only when cold junction adjustment has been performed after installing a new module. Otherwise accuracy is ±3 °C

#### **Ordering Information**

#### Step 1:Select base unit model and factory options

Models	Description	
DAS1800 (base unit)	The DASI800 base unit includes the following standard; 10 module slots, 2 TB SSD, 16 digital channels, SUB-D 15 HD pin connector for external triggering and synchronization, 5 W power rail, 15.6" TFT LCD Full HD (1920 x 1080), USB 3.0 (x2), USB 2.0 (x2), 1 Gbps LAN (x2), and HDMI (x1) interfaces	
DAS1800-BAT	Includes the DASI800 base unit with a non-removeable Lithium-ion battery providing up to 3 ½ hours of continuous us	
Factory Options	Description	
DI8-FLE	Fanless version of the DAS1800 base unit	

Note: D18-FLE is not compatible with a DAS1800-BAT.

# Step 2: Determine the number and type of measurement modules for your application. Select up to 10 modules.

Module	Channels	Measurements	
Universal (D18-UNI4)	4	Voltage, current (shunt), temperature (thermocouple), frequency, PWM, TRMS	
High Impedance (D18-HIZ4)	4	Voltage, current (shunt), temperature thermocouple), frequency, PWM, TRMS	
Multiplexed 8 (D18-MUX8)		Voltage, current (shunt), resistance, temperature (RTD), temperature (thermocouple)	

Note: Refer to the measurement modules and specifications sections for additional information.

#### Step 4: Contact us

#### **B&K Precision:**

For inquiries and assistance configuring your DAS1800, please fill out the DAS1800 Order Request Form.

Or, visit our where to buy page at <u>bkprecision.com</u> to view a list of authorized vendors.

#### Step 3: Select your accessories

Accessory	Part Number
Isolated digital channel board	917008000
Digital channels patch cord	902407000
Replacement 4 pin terminal block, pack of 8	GCM5P
Replacement quick-connect banana plug, 4 pairs	TLQ2B
Replacement DAS1800 hard case	LCLDR

#### <u>Sefram:</u>

Visit https://www.sefram.com/en/contact-us.html to request a quote.



### 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.



#### **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



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#### **Product Applications**

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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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