Distributor brochure

FLUKE®

Calibration

1586A Super-DAQ Precision Temperature Scanner

The most accurate and flexible temperature data acquisition system

1586A Super-DAQ Precision Temperature Scanner

The 1586A Super-DAQ is the most accurate and flexible temperature data acquisition system on the market. It scans and records temperature, dc voltage, dc current, and resistance for up to 40 input channels and scan speeds as fast as 10 channels per second. The Super-DAQ can be configured for use as a multi-channel data logger in the factory or as a precision reference thermometer for benchtop sensor calibration in the lab.

The 1586 is ideal for a number of applications such as thermal mapping, temperature validation, process sensor calibration, and more. These applications are found in various industries including pharmaceutical, biotechnology, food processing, aerospace, and automotive.

Product highlights

- Measure thermocouples, PRTs, thermistors, dc voltage, dc current, and resistance
- Best-in-class temperature measurement accuracy:
  - PRTs: ± 0.005 °C (using external DAQ-STAQ Multiplexer)
  - Thermocouples: ± 0.5 °C (using High-Capacity Module and internal CJC)
  - Thermistors: ± 0.002 °C
- Input channels: Up to 40 isolated universal inputs
- Selectable scan speed: Up to 10 channels per second
- Four modes of operation: Scan, Monitor, Measure, Digital Multimeter (DMM)
- Real-time color trending: Chart up to four channels simultaneously
- 6-1/2 digit display resolution for dc voltage, dc current, and resistance
- Current reversal minimizes thermoelectric effects, improving PRT/RTD measurement accuracy
- Automated sensor calibration: Control Fluke Calibration temperature sources such as drywells or micro-baths for automated calibration routines
- Data storage: Records up to 20 MB of data and setup files to internal non-volatile memory or to an external USB drive. Transfer data to a PC using the USB drive or LAN connection and view data in Microsoft® Excel
- Data security: Administrator and user profiles for protecting settings and ensuring test traceability
- Mx + B scaling and channel offset zero function
- Alarms: Two independent, user-defined alarms for each channel indicate when an upper or lower range has been exceeded

Key applications

Application	1586A Super-DAQ advantage
Pharmaceutical/Biotechnology	
Chamber mapping Steam-in-place (SIP) F_0 calculation Lyophilization (freeze drying) Sanitary sensor calibration	• Align Channels feature allows the user to zero offsets between channels for chamber mapping and validation. • Math channels facilitate F_0 calculations • Automated Sensor Calibration feature controls Fluke Calibration drywells or baths for an automated calibration routine • Security levels support regulatory requirements for data security
Food processing	
Lyophilization (freeze drying) Monitor/map oven temperatures Sanitary sensor calibration Cold storage monitoring Monitor, troubleshoot refrigeration systems	• Similar to pharmaceutical/biotechnology, but accuracy requirements typically less stringent • Pressure transducer measurement possible using Mx+B function • DAQ-STAQ Multiplexer increases flexibility for use on the processing floor and the laboratory
Aerospace	
Fuel test stands Engine test stands Materials test Endurance testing Avionics equipment test Heat treating test	• Portability facilitates sensor calibration on the flight line • Align Channels feature useful for uniformity testing • Reference thermometer characterization (ITS-90, CVD) available for sensor calibration
Automotive	
Engine test and monitoring Fuels testing Life cycle testing Materials testing Monitor paint both temperatures Map temperature of drying ovens Sensor calibration	• 1586A flexibility allows for laboratory testing with the DAQ-STAQ and data acquisition on the factory floor • Channel count and scan rate adequate for most applications
Metals	
Uniformity testing of heat treating furnaces Alloy quality control Process control Documenting quality control R&D	• Thermocouples can reach inside large heat treating furnaces where IR thermometers cannot

Selling benefits to emphasize

Six key features set the 1586A apart from other products in its class (i.e. Isotech milliK with millisKanner, Agilent 34970A/34972A with 34901, Keithley 2700, Yokogawa DX1000)

1. Best temperature measurement accuracy
2. Flexible configuration for the factory or benchtop
3. Multiple modes of operation
4. Real-time graphing in color
5. Data portability and security
6. Automated sensor calibration

1 Best temperature measurement accuracy

The 1586A Super-DAQ reads PRTs, thermocouples, and thermistors with best-in-class accuracy:

- PRTs ± 0.005 °C
  (using external DAQ-STAQ Multiplexer)
- Thermocouples: ± 0.5 °C
  (using High-Capacity Module and internal CJC)
- Thermistors: ± 0.002 °C

1586A Super-DAQ front panel.

2 Flexible configuration for the factory or benchtop

For factory applications, the Super-DAQ is configured with the internal High-Capacity Module. Connecting thermocouples or RTDs to input terminals can be time consuming—especially if you're using many sensors of the same type for one job, and then switching to a different sensor type for another job. The internal High-Capacity Module allows you to pre-configure multiple input modules and simply exchange one module for another, depending on your test requirements. Recall a stored test setup to make the changeover even faster. And if you prefer, you can always measure a variety of different input types at the same time in a single High-Capacity Module, including thermocouples, RTDs, voltage, resistance, or current.

1586-2586 High-Capacity Module.
Universal input channels designed to measure temperature, resistance, dc voltage, and dc current for data acquisition applications on the factory floor where channel count and scan speed are important.

For a calibration lab where accuracy is of primary importance, the Super-DAQ is best configured with a DAQ-STAQ Multiplexer. The external DAQ-STAQ features mini-jack thermocouple terminals—each with its own reference junction sensor—and patented mini-DWF, gold-plated input terminals, which accept bare wire, spade lug, or mini-banana-plug terminations. Easily connect and disconnect PRTs, thermistors, and thermocouples for benchtop temperature calibration. It can be stacked on the 1586 to reduce footprint in busy labs. Flexibility to configure the Super-DAQ for factory or calibration lab use reduces your equipment needs and cost.

1586-2588 DAQ-STAQ Multiplexer.
Designed for high-accuracy measurements in secondary temperature calibration labs. Easily connect/disconnect thermocouples, PRTs, and thermistors.

3 Multiple modes of operation

The Super-DAQ can operate in four modes that let you scan, monitor, measure, or function as a digital multimeter from a single instrument. Sequentially scan through channels based on a user defined test. Monitor any single channel during a scan, without interrupting the scan. Measure and record data on a single channel without the need of a pre-configured test file. Or in DMM mode, use the front panel channel like a familiar benchtop digital multimeter to quickly measure dc voltage, dc current, or 2-wire and 4-wire resistance without the need to configure the channel.

Scan, monitor, measure, and DMM function keys on the front panel.

4 Real-time graphing in color

Most data acquisition systems only let you view data on one channel. But now the Super-DAQ, lets you view real time data for all channels in table format or chart up to four channels in color at the same time. You can zoom in or out to see data of interest and monitor trends. A history mode lets you scroll through collected data within a scan file… all without a PC and expensive charting programs. Switch between chart view and table view of various measurement data and statistics.

The 1586A Super-DAQ graphing real time data from four input channels.

5 Data portability and security

The Super-DAQ includes 20 MB internal memory that can store over 75,000 readings with timestamp. Data and set-up files can be easily moved to a PC for analysis using a USB flashdrive or over a network using the LAN interface connection.

The Super-DAQ also includes two levels of data security to prevent unauthorized users from tampering with or forging test data or setup files. This security feature is especially important to industries that are regulated by government agencies where data traceability is required.

Transferring Super-DAQ data and setup files using a USB flash drive.

6 Automated sensor calibration

With the Automated Test feature, you can automate sensor calibration without a PC and software. When connected to a Fluke Calibration drywell or fluid bath via the RS-232 interface, the Super-DAQ takes control of the temperature source and runs your calibration automatically. You simply program the number of setpoint temperatures and their values, select a scan sequence (linear, alternate, up/down), assign a reference channel, and set the required stability band.

The Super-DAQ monitors the temperature source's stability via the reference channel, collects the data once stabilized, and then advances to the next setpoint temperature. After you configure and start the test, you can walk away to work on other things. The Super-DAQ just made your day a whole lot easier.

1586A configured with a DAQ-STAQ and 9190A Ultra-Cool Field Metrology Well for automated sensor calibration.

What's in the box?

- 1586A Super-DAQ (configured as ordered with modules and relay boards)
- USB cable
- Line cord
- Traceable certificate of calibration
- Screwdriver (included with HC module)
- Users manual on CD (English, Chinese, Japanese, Korean, French, German, Spanish, Portuguese, and Russian)
- Printed safety sheet
- USB serial driver on CD
- Note: RS-232 cable is NOT included. If required, order item# 2673499 (DE-9 Null Modem, FF)

Pricing

Model #	Item	Description	UPC Code	List Price
Demo Kit				
1586A-DKIT 120	4384800	Demo Kit – Super-DAQ, 1 High-Capacity Module, 1 DAQ-STAQ Multiplexer, Case, Probes	0 95969 68403 3	$7,295
Super-DAQ				
1586A 120	4409886	Super-DAQ, 120V	0 95969 69334 9	$2,395
1586A 120/C	4377390	Super-DAQ, 120 V, Accredited Calibration	0 95969 68101 8	$2,545
Super-DAQ and DAQ-STAQ Multiplexer				
1586A/1DS 120	4409921	Super-DAQ, 1 DAQ-STAQ Multiplexer, 120 V	0 95969 69338 7	$3,850
1586A/1DS 120/C	4377579	Super-DAQ, 1 DAQ-STAQ Multiplexer, 120 V, Accredited Calibration	0 95969 68119 3	$4,145
1586A/2DS 120	4410006	Super-DAQ, 2 DAQ-STAQ Multiplexers, 120 V	0 95969 69346 2	$5,305
1586A/2DS 120/C	4377762	Super-DAQ, 2 DAQ-STAQ Multiplexers, 120 V, Accredited Calibration	0 95969 68137 7	$5,745
Super-DAQ and High-Capacity Module				
1586A/1HC 120	4409963	Super-DAQ, 1 High-Capacity Module, 120 V	0 95969 69342 4	$2,865
1586A/1HC 120/C	4384181	Super-DAQ, 1 High-Capacity Module, 120 V, Accredited Calibration	0 95969 68352 4	$3,090
1586A/2HC 120	4410045	Super-DAQ, 2 High-Capacity Modules, 120 V	0 95969 69350 9	$3,335
1586A/2HC 120/C	4384369	Super-DAQ, 2 High-Capacity Modules, 120 V, Accredited Calibration	0 95969 68370 8	$3,635
Super-DAQ, High-Capacity Module, and DAQ-STAQ Multiplexer				
1586A/DS-HC 120	4410089	Super-DAQ, 1 High-Capacity Module, 1 DAQ-STAQ Multiplexer, 120 V	0 95969 69354 7	$4,320
1586A/DSHC 120/C	4384651	Super-DAQ, 1 High-Capacity Module, 1 DAQ-STAQ Multiplexer, 120 V, Accredited Calibration	0 95969 68389 0	$4,690
Accessories				
1586-2586	4409820	High-Capacity Module without Relay Card	0 95969 69328 8	$205
1586-2586/C	4410748	High-Capacity Module without Relay Card, Accredited Calibration	0 95969 69389 9	$280
1586-2586-KIT	4409835	High-Capacity Module with Relay Card	0 95969 69329 5	$470
1586-2586-KIT/C	4410753	High-Capacity Module with Relay Card, Accredited Calibration	0 95969 69390 5	$545
1586-2586-RLY	4410113	Relay Card for High-Capacity Module	0 95969 69357 8	$265
1586-2588	4409847	DAQ-STAQ Multiplexer without Adapter Card	0 95969 69330 1	$1,280
1586-2588/C	4410766	DAQ-STAQ Multiplexer without Adapter Card, Accredited Calibration	0 95969 69391 2	$1,425
1586-2588-KIT	4409864	DAQ-STAQ Multiplexer, Adapter Card, Interface Cable	0 95969 69332 5	$1,455
1586-2588-KIT/C	4410775	DAQ-STAQ Multiplexer, Adapter Card, Interface Cable, Accredited Calibration)	0 95969 69392 9	$1,600
1586-2588-ADP	4409858	Relay Card for DAQ-STAQ Multiplexer	0 95969 69331 8	$175
1586-2588-CBL	4410465	DAQ-STAQ Multiplexer Interface Cable	0 95969 69377 6	$45
1586-CASE	4406713	Super-DAQ Carrying Case (mainframe and internal modules)	0 95969 69282 3	$545
1586/DS-CASE	4406724	Super-DAQ/DAQ-STAQ Carrying Case (mainframe and external module)	0 95969 69283 0	$845

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1586A/1HC

1586A/1DS

1586A/DS-HC

Ordering information

Model	Description	Dimensions (LxWxH inches)	Package Weight (pounds)	Country of origin	ECCN
Demo Kits					
1586A-DKIT	Demo Kit – Super-DAQ, 1 High-Capacity Module, 1 DAQ-STAQ Multiplexer, Case, Probes	32.0 x 21.0 x 13.0	50.0	CN, US	3A992, EAR99
Super-DAQ configurations					
1586A	Super-DAQ	21.4 x 16.5 x 9.7	17.1	CN	3A992
1586A/1DS	Super-DAQ, 1 DAQ-STAQ Multiplexer	21.4 x 16.5 x 9.7	30.4	CN	3A992
1586A/2DS	Super-DAQ, 2 DAQ-STAQ Multiplexers	21.4 x 16.5 x 9.7	43.6	CN	3A992
1586A/1HC	Super-DAQ, 1 High-Capacity Module	21.4 x 16.5 x 9.7	18.1	CN	3A992
1586A/2HC	Super-DAQ, 2 High-Capacity Modules	21.4 x 16.5 x 9.7	19.0	CN	3A992
1586A/DS-HC	Super-DAQ, 1 High-Capacity Module, 1 DAQ-STAQ Multiplexer	21.4 x 16.5 x 9.7	31.3	CN	3A992
Accessories					
1586-2586	High-Capacity Module without Relay Card	12.5 x 5.5 x 2.6	0.8	CN	EAR99
1586-2586-KIT	High-Capacity Module with Relay Card	12.5 x 5.5 x 2.6	1.2	CN	EAR99
1586-2586-RLY	Relay Card for High-Capacity Module	12.5 x 5.5 x 2.6	0.8	CN	EAR99
1586-2588	DAQ-STAQ Multiplexer without Adapter Card	21.3 x 16.5 x 9.7	12.6	CN	EAR99
1586-2588-KIT	DAQ-STAQ Multiplexer, Adapter Card, Interface Cable	21.3 x 16.5 x 9.7	13.2	CN	EAR99
1586-2588-ADP	Relay Card for DAQ-STAQ Multiplexer	12.5 x 5.5 x 2.6	0.9	CN	EAR99
1586-2588-CBL	DAQ-STAQ Multiplexer Interface Cable	12.0 x 9.0 x 5.0	1.1	CN	EAR99
1586-CASE	Super-DAQ Carrying Case (mainframe and internal modules)	26.0 x 17.7 x 10.2	29.1	US	EAR99
1586/DS-CASE	Super-DAQ/DAQ-STAQ Carrying Case (mainframe and external module)	32.0 x 21.0 x 13.0	44.1	US	EAR99

Sales collateral

The following sales material has been prepared for the 1586A Precision Temperature Scanner introduction and may be downloaded from **http://us.flukecal.com/1586A-Launch**

- Customer brochure
- Customer presentation
- Extended specifications
- Press release
- Product announcement
- Sales training presentation
- Sales guide
- Distributor brochure
- Catalog pages
- Product photos

The following product videos may be accessed from the 1586A product page at **http://us.flukecal.com/1586A**

- Introductory Video
- Demo Video Series (5 videos)

Fluke Calibration. *Precision, performance, confidence.*™

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