



**Data Acquisition**  
Where you need it  
When you need it  
How you need it



- Accurate
- Flexible
- Easy-to-use
- Portable
- Networked
- Expandable to thousands of channels

# Fluke data acquisition solutions adapt to your needs

## Get the data you want, where, how and when you want it.

Fluke gives you a broad choice in how you collect and transfer data for process monitoring and laboratory test systems. You can choose a stationary or portable system. Transfer data to internal memory, to a removable memory card, or to your PC. Choose a standalone or distributed networked units. And you can expand your system from 20 to more than 2,000 channels.

Regardless of which you choose you'll always get Fluke's well known accuracy, reliability, speed, and ease of use. All Fluke data acquisition products feature unique, built-in universal signal conditioning and a plug-in Universal Input Module to enable you to measure virtually any type of signal without having to purchase extra equipment. Plus, powerful FlukeDAQ application software supports easy configuration, trend analysis, remote viewing, email notifications and enables you to quickly build human-machine-interfaces without any programming.

Any data acquisition application that requires high accuracy, easy setup, and convenience calls for Fluke data acquisition products, which is why you'll find them widely used for:

- R & D applications
- Environmental testing
- Product testing and process validation
- Troubleshooting
- Manufacturing test systems

Whether you're gathering data at a high-voltage substation, a nuclear power plant, in a clean room, on a production line, or on an automotive test track, Fluke data acquisition products can make your job easier by delivering the data you need, when and where you need it.

## Accuracy, flexibility and ease of use come standard

From a single 20 channel Hydra™ Series III portable data logger to a 2,000+ channel precision temperature measurement 2680A data acquisition system, Fluke data acquisition products share several unique advantages.

- **Built-in signal conditioning saves time and money.** Fluke's data acquisition products were the first to integrate signal conditioning directly into the instrument. Assign any measurement function—thermocouple, RTD, volts, frequency, or ohms—to any or all channels.
- **Removable universal input module connects any signal.** Our unique, patented Universal Input Module allows you to connect and measure virtually any electrical or physical parameter. Thermocouple reference junction compensation occurs automatically by sensing the temperature of the input module's isothermal block. Virtually any combination of sensor or signal lines may be connected to the input module, which is plugged into the back of the data acquisition unit. You can pre-wire extra input modules at each test site and move your data acquisition units from one location to another.
- **Rugged design for reliable performance.** Fluke data acquisition products are designed to stand up to rugged industrial environments with some models operating from -20 °C to 60 °C. A sturdy metal chassis effectively shields against electromagnetic interference so you can maintain high measurement accuracy on low-level signals regardless of surrounding noise. They are tested to stringent shock and vibration standards and to withstand surges of up to 1500 V input on most models. All units conform to IEC, CSA, and CE standards.

- **Isolated circuitry for top accuracy.** Fluke analog measurement circuitry is fully isolated channel to channel, input to output, and input to ground, supporting direct measurement of voltages up to 300 V ac rms and are certified to international Category II electrical safety standards
- **Scan triggers**, including interval, push button, external, and alarm triggers, scan all defined channels.
- **Mx+B scaling** is available on each channel.
- **Math Channels.** All Fluke data acquisition products have available math channels to allow real-time calculations to your data file based on results of other channel readings.
- **Two alarms** can be set for each channel.
- **Real-time clock** offers precise time stamping of data.
- **Closed-case calibration** delivers reliability and traceability.



**The Fluke 2680 Series:  
Precise and versatile standalone or networked data acquisition**

The Fluke 2680 Series delivers the precision necessary for meticulous lab work along with the rugged flexibility to meet the ever changing needs of industrial applications. Run one standalone data logging system with 20 to 120 universal channels or connect several networked data acquisition systems to serve 2,000+ channels on your LAN.

**The Fluke Hydra™ Series III:  
Price-performance breakthrough in a stand-alone data acquisition system**

The Fluke Hydra Series III brings a new dimension to viewing data on your instrument with its graph color display with real-time charting capabilities. Measurement accuracy at 0.0024 % continues the Hydra series legacy of precision, multichannel data acquisition.

**The Fluke NetDAQ® Series:  
Distributed, networked data acquisition that works with what you have**

Distributed Fluke NetDAQ units plug right into your existing networks to send data directly to a PC. This saves the cost of setting up a new network and allows multiple users to simultaneously view data in real time. NetDAQ units can also be used as a portable dedicated system connected to a laptop computer for maintenance, product validation,

	Hydra Series III	NetDAQ	2680 Series
<b>Universal signal conditioning</b>	Yes	Yes	Yes
<b>Basic dc accuracy</b>	0.0024 %	0.01 %	0.01 %
<b>PC interface</b>	USB; Ethernet	Ethernet	Ethernet
<b>Channels per mainframe/system</b>	66/2000+	20/2000+	120/2000+
<b>Max channels/second</b>	46	1000	1000

research, and troubleshooting applications.

**Versatile software for easy setup**

**Powerful, flexible, and easy-to-use Fluke DAQ software (2680A-APSW)** included with every 2680 Series and NetDAQ models, and makes it easy to instantly configure your Fluke Data Acquisition System with any mix of Hydra Series III, NetDAQ or 2680A Series product. Over 2000 channels can be configured with this system. Fluke DAQ software can schedule and record scan data to remote file locations, allow multiple viewing via web browser and email alerts to operators.

**Optional Trend Link for Fluke software** provides comprehensive trend plotting, batching, and analysis capabilities for the Hydra Series III, NetDAQ and 2680A systems using Fluke DAQ software. It combines the look and feel of a chart recorder with the analytical power of a PC.

# 2638A Hydra Series III Data Acquisition System

## The Fluke 2638A Hydra Series III: Key features

- DC accuracy of 0.0024 %
- Thermocouple accuracy of 0.5 °C
- Up to 66 universal differential isolated inputs
- On-screen color trend graphing of up to four channels at a time
- Easy-to-use menu system for setup and data management
- Multi-channel real-time data display
- Input types: ac V, dc V, ac I, dc I, thermocouple, PRT (2, 3, 4 w), thermistor, resistance (2-4 w), frequency
- 6.5-digit bench DMM function for front-panel inputs
- Monitor function for real-time viewing and charting between scans
- 20 on-board math channels
- One-button screen capture of chart or data displays
- 46 channels/second basic dc scan rate
- Internal 75,000 scan/setup file memory
- USB flash drive support
- Data security features
- CAT II 300 V input safety rated



## Industrial grade, precision data acquisition

DC measurement accuracy of 0.0024 %, basic 0.5 °C thermocouple accuracy, full-color display, easy-to-use menu system and international Category II safety ratings put the 2638A in a category of its own as a truly industrial grade, precision data acquisition system. The dedicated 6.5 digit digital multimeter (DMM) mode adds additional utility and value.

The 2638A is expandable from 22 to 66 channels of differential analog inputs. A flexible, 22-channel Universal Input Connector lets you connect and disconnect any type of input to any channel, quickly and easily. Selectable inputs include dc voltage, ac voltage, resistance, thermocouple, RTD, thermistor, frequency and dc and ac current. You can also use the 2638A with FlukeDAQ software and other Fluke data loggers to create a flexible, customized data acquisition system with an almost unlimited number of channels.





### Universal input connector

The 2638A incorporates the Fluke Universal Input Connector to bring more accuracy to thermocouple measurements than most other instruments in its class. The Universal Input Connector supports 14 worldwide thermocouple types. Temperature-focused menu selections make the 2638A especially suitable for temperature validation applications. If you need to “zero” a large number of thermocouples to a known reference temperature before starting a temperature profiling or validation test, the 2638A will normalize all readings to your reference channel at the push of a button and store the offsets for reference in a supporting data file. If you are conducting chamber tests, heat treating tests under ASM guidelines, or validating temperature devices under 21 CFR regulations, Hydra Series III makes it that much easier to comply.

The Universal Input Connector plugs into any open slot in the 2638A that contains a relay card. The Universal Input Connector has 22 input channels (20 universal inputs and 2 dedicated, low-burden input current channels). Each input connector contains a CJC (cold junction compensation) device, which is calibrated at the factory. The calibration date and input connector serial number are programmed into the

input connector and are read by the 2638A when installed. This information is saved in the test setup data file, which is available for review with any associated scan data from a test setup. This feature is a valuable form of traceability if you are working in a regulated industry.

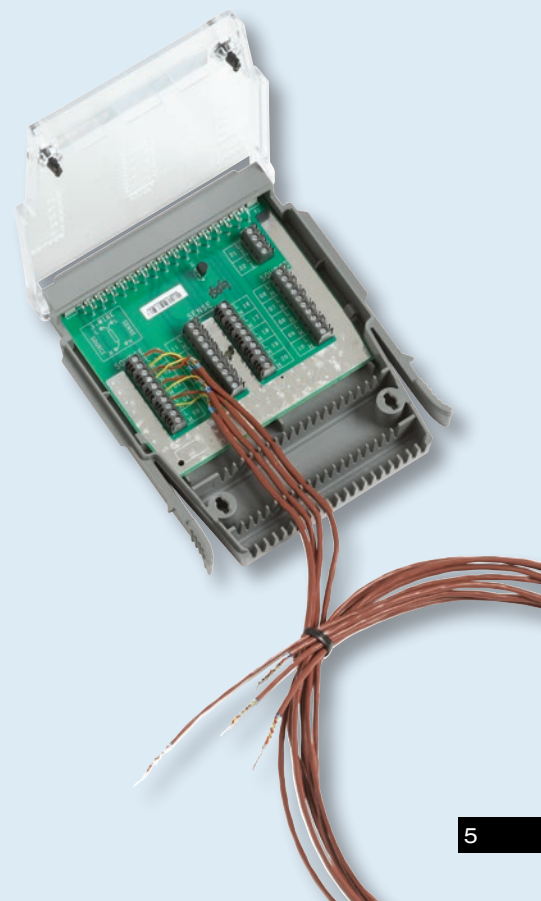
Wiring a test or system setup for 20 to 60 or more channels can be time consuming. With the inexpensive plug-in Universal Input Connector, you can wire your system once, quickly disconnect the connector from your Hydra, and then reconnect the Hydra to another input connector for use in a different area.

Other data loggers require you to wire your inputs directly to an expensive “plug-in” active component signal conditioning module. If you need your instrument at another location for another test, you must remove your wiring or use another expensive plug-in signal conditioning module. With Hydra Series III, all your signal conditioning is inside the mainframe, not in your input connector.

Using multiple low-cost Universal Input Connectors gives you the flexibility to leave your input connector at the test site, completely wired, and ready to use. When you need data from that site, simply “plug in” and load your saved setup file. It’s that simple!

### Expandable channel capacity

Each 2638A has three slots in the rear panel. Each slot can hold a relay card and a 22-channel Universal Input Connector. Three models are available, from 22 channels to 66 channels per mainframe. Select a base model with 22 channels and add 22-channel expansion kits when needed. The low cost per channel makes a 2638A a good value for any budget.



## Ordering information

### 2638A/60

Data Acquisition Unit/DMM: 60 universal channels (includes 3 relay boards, 2638A-RLY and 3 2638A-100 connectors)

### 2638A/40

Data Acquisition Unit/DMM: 40 universal channels (includes 2 relay boards, 2638A-RLY and two 2638A-100 connectors)

### 2638A/20

Data Acquisition Unit/DMM: 20 universal channels (includes one relay board, 2638A-RLY and one 2638A-100 connector)

Power selection: Specify 100 V, 120 V, 220 V, 240 V power when ordering (power setting may be changed by the end user)

*Each 2638A is shipped with the relay boards and Universal Input Connectors installed, one DMM style test lead set, product manual, safety information and warranty registration on CD, power cord, screwdriver, a traceable calibration report with data, and 2680A-APSW/L Fluke DAQ Lite Software.*

## Options and accessories

### 2638A-20chkit

20-channel Expansion Kit for 2638A: (includes one relay board 2638A-RLY and 2638A-100 connector)

### 2638A-100

Extra Universal Input Module for 2638A

### 2638A-RLY

Extra Relay Board for 2638A (Replacement)

### Y2638

19-inch Rackmount, Single/Dual Mounting

### 2638A-101

10 ohm Shunt Resistors (quantity 10 each) 100 mA max, 0.08 %

### 2638A-1GB

1 GB USB Flash memory drive

### 2638A/CASE

2638A Transit Case

### Accredited Calibration Certificate

17025: add option/C to model

## Software

### 2680A-APSW/LU

Upgrade from Lite version to full version of Fluke DAQ Software, 2680A-APSW

### 2680A-904

Trend Link for Fluke Data Acquisition Products (requires 2680A-APSW)

## On-board math channels

The 2638A has 20 on-board math channels with two alarms per channel to allow you to perform conversions and other calculations as your data is scanned. All channel results are stored in the data file for later analysis plus you have the ability to set alarms on the calculated results of a math channel. Math functions available:

- Square root
- Polynomial (6th order)
- Exponent
- Absolute value
- Reciprocal
- Multiply/Divide
- Add/Subtract
- Average (up to 10 channels)
- Minimum (up to 10 channels)
- Maximum (up to 10 channels)
- Log 10
- Natural Log

## Graphical color display with easy-to-use menus

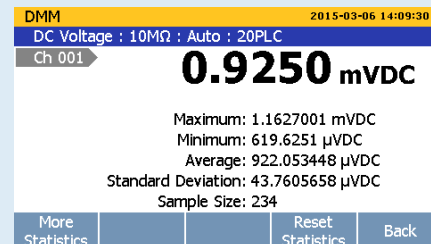
Never get lost again in a complex menu tree while configuring channels or setting up a test. The large, full color, thin film diode (TFD) display enables the Hydra Series III to display comprehensive easy-to-understand data and easy menu navigation. Back-lighted function keys quickly confirm the active menu selection. The "Record" key illuminates to indicate when the 2638A is recording data in scan, monitor or DMM mode. You always have visible confirmation when your data is being recorded.

Copy-and-paste channel functions make repetitive channel setups a simple task. Top-of-screen menu bar headings always let you know where you are in the setup process.

View your data with the push of a button. Page through all channel data and alarms in a quick view mode or scroll through channels and channel statistics individually. Statistics include rate of change, min, max, standard deviation, average, sample size and peak-to-peak information.

## Language support

All displayed text in the menus and data display area are translated to eight languages. You can change the language under the instrument setup area with the push of a button. French, Spanish, Japanese, German, Korean, English, Portuguese, Chinese and Russian are all supported languages in the 2638A.



## DMM mode adds functionality and value

The Hydra Series III is based on a 6.5 digit (22-bit) precision digital multimeter measurement engine with exceptional measurement quality and resolution—so when you are not using your Hydra to collect multi-channel data, you can use it as a digital multimeter. Front-panel "DMM-style" input jacks and dedicated DMM menu selections enable you to measure dc voltage, dc resistance, ac voltage, ac resistance, ohms, frequency, and temperature (thermocouples, RTDs and thermistors). Record DMM measurements to a separate DMM data file for later viewing. The 2638A also displays measurement statistics and graphs measurements right on the main display.

# 2638A Hydra Series III specifications

## General specifications

### Mains voltage

100 V Setting: 90 V to 110 V  
 120 V Setting: 108 V to 132 V  
 220 V Setting: 198 V to 242 V  
 240 V Setting: 216 V to 264 V

### Line frequency

47 Hz to 440 Hz

### Power consumption

36 VA peak (24 W average)

### Temperature

Operating: 0 °C to 50 °C  
 Storage: -20 °C to 70 °C  
 Warm-up: 1 hour to full accuracy specifications

### Relative humidity (non-condensing)

Operating: 0 °C to 28 °C <90 %  
 28 °C to 40 °C <75 %  
 40 °C to 50 °C <45 %

Storage: -20 °C to 70 °C <95 %

### Input protection

Front panel: 300 V CAT II  
 Input module: 150 V CAT II, 250 V rms with maximum transient voltage of 1000 V peak.

### Channel capacity

Universal channel:  
 61 (1 on front panel)  
 Current channels:  
 2 per input module (1 on front panel)  
 Digital I/O: 8 bits  
 Totalizer: 1  
 Alarm outputs: 6  
 Trigger input: 1

### Math channels

Number of channels: 20  
 Operations: Add, subtract, multiply, divide, average, polynomial, log, exponent, absolute value, minimum, maximum, reciprocal, square root

Trigger types: Interval, external (trigger input), alarm, remote (bus), manual

LAN: Ethernet 10/100, TCP/IP  
 USB: (virtual serial port) full speed; rear port Type B  
 USB: Front port; Type A

## Memory

Scan data RAM: 1 Mb  
 Data flash memory: 10 Mb  
 Setup flash memory: 10 Mb

## Scan rate

Fast: 46 channels per second max (dc)  
 Medium: 17 channels per second  
 Slow: 3 channels per second  
 Display resolution: 4.5 to 6.5 digits, depending on function and sample rate

## Digital I/O

Absolute voltage range: -4 V to 30 V  
 Input minimum logic high: 2.0 V  
 Input maximum logic low: 0.7 V

## Totalizer

Minimum pulse width: 100 µs  
 Maximum frequency: 10 kHz  
 Debounce time: 5 ms  
 Maximum count: 1048575

## Trigger

Absolute voltage range: -4 V to 30 V  
 Minimum logic high: 2.0 V  
 Maximum logic low: 0.7 V  
 Minimum pulse width: 100 µs  
 Maximum latency: 100 ms

## Alarm Output

Absolute voltage range: -4 V to 30 V  
 Output type: Open drain active low  
 Output logic low: 0 V to 0.7 V  
 Maximum sink current: 100 mA

## Hydra™ Series

Input	Range	Resolution	Accuracy
DC volts	100 mV to 300 V	0.1 µV to 1 mV	0.0024 %
DC current	100 µA to 100 mA	0.1 nA to 100 nA	0.015 %
AC volts	100 mV to 300 V	0.1 µV to 1 mV	0.11 %
AC current	100 µA to 100 mA	0.1 nA to 100 nA	0.3 %
Resistance	100 Ω to 100 MΩ	0.1 m Ω to 100 Ω	0.01 %
Frequency	20 Hz to 1 MHz	0.01 Hz to 1 KHz	0.01 %
RTD (pt)	-200 °C to 600 °C	0.001 °C	0.016 °C
Thermistor	-40 °C to 150 °C	0.001 °C	0.007 °C

Thermocouple type	Range	Resolution	Accuracy (External) CJC	Accuracy (Internal) CJC
K	-270 °C to 1372 °C	0.01 °C	0.15 °C	0.50 °C
T	-270 °C to 400 °C	0.01 °C	0.11 °C	0.41 °C
R	-50 °C to 1768 °C	0.01 °C	0.47 °C	0.52 °C
S	-50 °C to 1768 °C	0.01 °C	0.54 °C	0.60 °C
J	-210 °C to 1200 °C	0.01 °C	0.12 °C	0.53 °C
N	-270 °C to 1300 °C	0.01 °C	0.17 °C	0.44 °C
E	-270 °C to 1000 °C	0.01 °C	0.09 °C	0.45 °C
B	100 °C to 1820 °C	0.01 °C	0.55 °C	0.55 °C
C	0 °C to 2315 °C	0.01 °C	0.33 °C	0.54 °C
D	0 °C to 2315 °C	0.01 °C	0.32 °C	0.44 °C
G	0 °C to 2315 °C	0.01 °C	0.32 °C	0.33 °C
L	-200 °C to 900 °C	0.01 °C	0.12 °C	0.48 °C
M	-50 °C to 1410 °C	0.01 °C	0.14 °C	0.41 °C
U	-200 °C to 600 °C	0.01 °C	0.11 °C	0.40 °C
W	0 °C to 2315 °C	0.01 °C	0.32 °C	0.33 °C

# 2680 Series



2686A Data Logging System

## Top precision and scalability for standalone or networked data acquisition

The Fluke 2680 Series data acquisition systems combine the best of lab precision with the rugged flexibility required in rapidly changing industrial applications. Whether you choose the 2680A Data Acquisition System with high-speed 10/100BaseT Ethernet network support or the 2686A Data Logging System, you can seamlessly expand your system any time, from 20 to more than 2,000 channels, just by adding modules and chassis.

Both models feature six slots in each chassis that you can fill with modules as needed to meet your application requirements. Five slots in each chassis are available for any combination of 2680 Series 20-channel analog input modules. The sixth slot is reserved for a 2680 Series digital I/O relay module to add control capabilities to your system. If you don't need the sixth slot for control, you can plug in an additional analog input module, increasing your channel count to 120 in a single chassis.

You can also link multiple 120 channel systems together seamlessly for the widest possible view of your data. And with TCP/IP connectivity you can connect to existing LANs to distribute information wherever it needs to go. Whether you need speed and throughput, isolated precision, or digital I/O and relays, the Fluke 2680 Series can scale up to thousands of channels to meet your needs.

## Key features

- **120 channel capacity chassis** designed for small- and large-scale precision data acquisition applications.
- **User-scalability from 20 to 120 universal analog input channels**, which can include digital input/output and alarm contact outputs in a single chassis.
- **Universal input modules** provide precision measurement of thermocouples, dc voltage, ac voltage, ohms, RTDs, thermistors, current, frequency. Connect any input type to any channel to match your application requirements—no “wasted” channels.
- **Superior thermocouple measurement accuracy** (J, K, R, S, T, N, L, U, C, B)
- **Multiple speed and scan selections**
- **Universal input conditioning** for any input, on any channel, any time (V dc, V ac, ohms, frequency, RTD, thermocouple, thermistor or current).
- **Optional precision, high-isolation analog universal input module (PAI) or fast scanning analog universal input module (FAI)** to connect and measure virtually any electrical or physical parameter.
- **Computed channels**, in addition to the 20 analog channels, each mainframe has 60 math channels that perform custom calculations using addition, subtraction, multiplication, division, log, natural log, exponent, square root, absolute value, and integer functions. Math channels feature the same alarm capability as analog channels, which saves having to perform separate post calculations on channel data. It is also especially useful for monitoring and alarming on real-time calculated values such as power, flow, volumes, pressure, and more.
- **Fluke DAQ software** which controls all functions and data files, communicates with and controls Fluke 2680A Series, NetDAQ® and Hydra Series III products and provides real-time and historical trending.
- **20 digital I/O and 8 form C, 1 A relay output module** for hard control of equipment.
- **Multiple power sources:** 100 V to 240 V and 9 V dc to 45 V dc.



**Fluke 2680 Series chassis and module selection chart**

Chassis	Analog channels/chassis	On board memory	PC interface	DIO/chassis
2680A	120	none	Ethernet	20 DIO + 8 relay DPST relays
2686A	120	ATA Flash to 1 GB	Ethernet	20 DIO + 8 relay DPST relays
Module	Readings/sec (max)	Channels/type	Max voltage/accuracy	Basic TC accuracy (type K)
2680A-FAI	1000	20/universal analog	50/0.02 %	0.8 °C
2680A-PAI	100	20/universal analog	150/300/0.01%	0.4 °C
2680A-DIO	N/A	20/digital; 8/relay	30	N/A

**Choose your chassis for standalone or networked data acquisition**

The Fluke 2680 Series offers the choice of networked data acquisition, stand-alone data logging, or a combination of both. Choose from two basic chassis models—the 2680A Data Acquisition System or the 2686A Data Logging System and then add the modules as needed to meet your requirements.

**2680A Data Acquisition System chassis**

The Fluke 2680A Data Acquisition System is the choice for multichannel applications requiring reliable Ethernet communications. It features a front-end style data acquisition system that communicates and distributes data anywhere you need it to go. The 10/100 LAN communications interface makes it compatible with both older and newer network platforms.

**2686A Data Logging System chassis**

The Fluke 2686A Data Logging System writes data to a memory card for easy retrieval and storage, making it ideal for remote locations and mobile or non-computer assisted data logging applications. The system comes with a 1 GB flash memory card, and supports memory cards of up to 4 GB to log data in standalone mode for easy storage and retrieval. The 2686A is easily configured for stand-alone data logging operations by simply selecting a preset configuration from the memory card. It can also be used in networks in tandem with the 2680A to provide the extra data security of a memory card.

**Choose your modules**

You can equip each 2680 Series chassis with up to six modules of the same type or combine fast analog input (2680A-FAI) and precision analog input modules (2680A-PAI) along with a digital I/O (2680A-DIO) and relay module. Both the 2680A-FAI and the 2680A-PAI modules support a wide range of inputs including dc volts, ac volts, RTD, Ohms, thermocouple, thermistor, dc current, ac current, and frequency. Other sensors and transducers, such as load cells, pressure sensors, and displacement sensors can be easily incorporated into your measurement system. Buy just the modules you need in the combinations you need them and expand your system as your requirements grow.

**2680A-FAI: The speed to capture dynamic process changes**

The Fluke 2680A-FAI module is a perfect choice when you need a lot of information in a hurry and still need to maintain a high degree of accuracy for your measurements. The 2680A-FAI module provides chassis throughput rates of more than 3,000 channels-per-second. Specially manufactured field effect transistors (FETs) allow up to + 50 V input, well above the 15 V industry norm, and channel-to-channel isolation to give you more confidence in the integrity of your measurements.

**2680A-PAI provides high precision and high isolation for the most demanding jobs**

The Fluke 2680A-PAI 20-channel high precision, high isolation module serves the most demanding jobs where precision and isolation are critical. Some of the most notable applications for this module include temperature measurement in semiconductor and pharmaceutical manufacturing, as well as nuclear plant performance monitoring. The 2680A-PAI module offers 300 V of isolation on two channels and 150 V on 18 channels, as well as 18 bit resolution and excellent thermocouple accuracy, all in a scalable system.

**2680A-DIO: Digital I/O and relay outputs add control**

For data acquisition systems that also require control functionality, the Fluke 2680A-DIO digital I/O and relay output module provides 20 digital I/O and eight hard-contact 1 A relays to provide the security and control you need. This equips each chassis to respond to a wide range of alarm or control situations. The 2680A-DIO also includes an up/ down counter with preset count capability, so you don't need to begin all counts at zero.



## Model 2680A-PAI Module

Input	Range	Resolution	Accuracy (3-Sigma) <sup>1</sup>
DC Volts	90 mV to 150/300 V	0.3 mV to 1 mV	0.01 %
AC Volts <sup>2</sup>	300 mV to 150/300 V	10 mV to 100 mV	0.3 %
Resistance	300 Ω to 3 MΩ	1 mΩ to 10 Ω	0.015 %
Frequency	15 Hz to 1 MHz	0.01 Hz to 100 Hz	0.05 %
RTD (Pt100)	-200 °C to 600 °C	0.003 °C	0.06 °C
<b>Thermocouples</b>			
J	-100 °C to 760 °C	0.02 °C	0.35 °C
K	-100 °C to 1372 °C	0.02 °C	0.4 °C
T	-100 °C to 400 °C	0.02 °C	0.3 °C
<i>Other Thermocouple types R, S, B, C, E, N, L, U</i>			

## Model 2680A-FAI Module

Input	Range	Resolution	Accuracy (3-Sigma) <sup>1</sup>
DC Volts	90 mV to 50 V	3 mV to 10 mV	0.02 %
AC Volts <sup>2</sup>	300 mV to 30 V	10 mV to 1 mV	0.3 %
Resistance	300 Ω to 3 MΩ	10 mΩ to 100 Ω	0.02 %
Frequency	15 Hz to 1 MHz	0.01 Hz to 100 Hz	0.05 %
RTD (Pt100)	-200 to 600 °C	0.03 °C	0.16 °C
<b>Thermocouples</b>			
J	-100 °C to 760 °C	0.2 °C	0.7 °C
K	-100 °C to 1372 °C	0.2 °C	0.8 °C
T	-100 °C to 400 °C	0.2 °C	0.7 °C
<i>Other Thermocouple types R, S, B, C, E, N, L, U</i>			

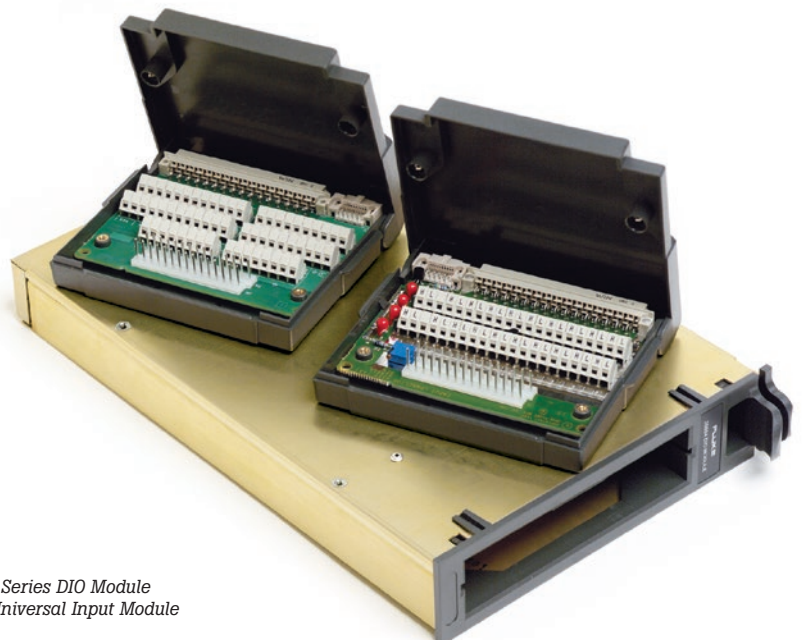
<sup>1</sup> Total instrument accuracy for 90 days following calibration and ambient temperature range of 18 to 28 °C. Includes A/D errors, linearization conformity, initial calibration error, isothermality errors, reference junction conformity and power line voltage effects within the range from 107 V ac to 264 V ac.

<sup>2</sup> Accuracies for crest factor to 2.0.

## 2686A active channels and memory card capacity (scans)

Memory usage/ Active channels	20 ch	40 ch	60 ch	80 ch	100 ch	120 ch
128 MB	800,000	528,000	400,000	320,000	264,000	224,000
256 MB	1.6 M	1.056M	800,000	640,000	528,000	448,000
512 MB	3.2 M	2.112 M	1.6 M	1.28 M	1.056 M	896,000
1 GB	6.2 M	4.224 M	3.2 M	2.56 M	2.112 M	1.792 M

Estimating space: 80 bytes/scan + 4 bytes/channel scanned. (Allow 4.5% overhead for card formatting)



2680 Series DIO Module  
and Universal Input Module

# 2680 Series specifications

- **Universal input module:** Connect 20 analog inputs or virtually any sensor type without external signal conditioning
- **2680A Series interfacing:** Ethernet; uses TCP/IP protocol via RJ45 connector, Cat 5. RS-232 input for calibration.
- **External trigger:** Activate scanning with real-world events
- **Totalizer:** Pre-settable starting count up/down counter
- **Alarm outputs:** Flag out-of-limit conditions to external devices
- **Power:** Accepts 100 V ac to 240 V ac, or 9 V dc to 45 V dc. Can operate from both simultaneously for fail-safe power operation

## Channel capacity (2680A or 2686A)

20 to 120 channels per chassis (6 analog input modules of 20 channels each) One master alarm (open collector) per chassis

## Communications:

10BaseT/100 BaseT, TCP/IP via RJ45 connector, CAT V

## Math functions

In addition to its analog and digital input channels, each system supports 60 computed channels. Calculations include time and rate, addition, subtraction, multiplication, division, log, natural log, exponent, square root, absolute value, integer function and average.

## Measurement speed (2680A-PAI)

Slow: 6 readings/second nominal  
 Medium: 41 (50 Hz), 48 (60 Hz) readings/second nominal  
 Fast: 143 readings/second nominal (5 readings/second for V ac nominal, 140 readings/ second on 300 Ω range, 37 readings/second on 3 MΩ range)

## Measurement speed (2680A-FAI)

Slow: 45 (50 Hz), 54 (60 Hz) readings/second nominal  
 Medium: 200 readings/second nominal  
 Fast: 1000 readings/second nominal (5 readings/second for V ac nominal, 370 readings/ second on 300 Ω range, 44 readings/second on 3 MΩ range)

## Analog to digital converter

**2680A-PAI:** 18 bit, multi-slope type  
**2680A-FAI:** 16 bit, multi-slope type

## Common mode rejection

### 2680A-PAI:

2680A-PAI: AC:  $\geq 120$  dB (50/60 Hz,  $\pm 0.1$  % max 1 kΩ source imbalance)  
 DC:  $\geq 120$  dB

### 2680A-FAI:

2680A-FAI: AC:  $\geq 100$  dB (50/60 Hz,  $\pm 0.1$  % max 1 kΩ source imbalance)  
 DC:  $\geq 100$  dB

## Normal mode rejection

50 dB @ 50/60 Hz,  $\pm 0.1$  %

## Common mode voltage maximum

**2680A-PAI:** 300 V dc or V ac rms (channels 1,11); 150 V dc or V ac rms (all other channels)  
**2680A-FAI:** 50 V dc or 30 V ac rms (all channels)

## 2680A-DIO

### Totalizing input

Pre-settable starting count up/down counter  
 DC coupled, non-isolated, max +30 V, min -4 V  
 Max count: 4,294,967,295  
 Minimum signal: 2 V peak  
 Threshold: 1.4 V  
 Rate: 0 kHz to 5 kHz (debounce off)  
 Hysteresis: 500 mV  
 Input debouncing: None or 1.66 ms

### Digital inputs/outputs: 20

Threshold: 1.4 V  
 Hysteresis: 500 mV  
 Maximum input: +30 V, min -4 V; non-isolated  
 Logical "zero" output:  
 0.8 V max |out = -1.0 mA (1 LSTTL load equivalent) 1.8 V max |out = -20 mA  
 3.25 V max |out = -50 mA  
 Logical "one" output:  
 Output voltage depends on external load 3.8 V min|out = 0.05 mA (1 LSTTL load equivalent)

## Relays

Quantity: 8  
 Type: Form C; DPST  
 Current: 1 amp, non-inductive  
 Operation time: 75 ms

## Alarm associations

Each Digital I/O may be randomly assigned as a digital input, status output, or alarm output (associated with any input channel or channels)

## Trigger input

Minimum pulse: 5 μs  
 Minimum latency: 100 ms  
 Input "High": 2.0 V min, 7.0 V max  
 Input "Low": -0.6 V min, 0.8 V max non-isolated, contact closure and TTL compatible

## Clock

Accurate to within 1 minute/month for 0 °C to 50 °C range

# Ordering information

## Hardware

### 2680A

Data Acquisition System Chassis, 6 slots

### 2686A

Data Logging System Chassis, 6 slots, with ATA Flash memory drive, includes 1 GB ATA flash memory card

### 2680A-FAI

Fast Analog Input Module 20 universal channels, 50 V max isolation. 1000 ch/sec scan rate, 16 bit resolution

### 2680A-PAI

Precision Analog Input Module 20 Universal Channels, 300 V max isolation, 18 bit resolution 140 ch/sec scan rate

### 2680A-DIO

Digital I/O and Relay Module, 20 DIO, 8, 1 A Contacts, Totalizer (one per chassis max)

## Software

### 2680A-APSW

Fluke DAQ Configuration Software and extra license for 2680 Series (included with 2680A and 2686A)—Full Version

### 2680A-904

Trend Link for Fluke

## Accessories

### 2680A-180

Universal Input Module, Extra Connector

### 2680A-102

2680A-DIO Connector Module, Extra Connector

### 2620A-101

Shunt resistor set (12 ea), 10 W, 0.1 %

### 2680A-810

1 GB ATA Flash Memory Card for 2686A

### Y2680

19-inch Rack Mount Kit for 2680 Series



2680 Series Chassis

## General specifications

### Power

100 V ac to 240 V ac, 50 Hz or 60 Hz

100 VA max, or 9 V dc to 45 V dc

(50 W max—all slots filled + memory card installed) (if both sources are applied simultaneously, the greater of ac or dc is used.), at 120 V ac the equivalent dc voltage ~14.5 V

### Temperature, humidity (non-condensing)

Operating:

-20 °C to 28 °C, ≤90% RH;

28 °C to 40 °C, ≤75% RH;

40 °C to 60 °C, ≤50% RH

Storage:

-40 °C to 70 °C, 5% to 95% RH

### Altitude

Operating: 2000 m

Storage: 12,200 m

### Standards

All inputs: IEC Measurement Category II

Product conforms to the following safety and emission standards:

EN610000-4-2,3,4,6,8

EN61326

EN61010-1, CAT II

CAN/CSA C22.2 No. 61010-1:2004

### Operating temperature

-20 °C to 60 °C (-4 °F to +140 °F)

### Storage temperature

-40 °C to 70 °C (-40 °F to +158 °F)

### Size

473 mm x 423 mm x 237 mm  
(18.6 in x 17 in x 9.3 in)

### Weight

2680A/2686A chassis only:  
8.47 kg (18.86 lbs.)

2680A-FAI: 0.79 kg (1.74 lbs.)

2680A-PAI: 1.21 kg (2.66 lbs.)

2680A-DIO: 0.80 kg (1.75 lbs.)

### Interfaces

Ethernet: Conforms to IEEE 802.3

Ethernet standard,

compatible with 100 BaseT and

10 BaseT standards, uses TCP/IP

protocol

RS-232C: For calibration only

### System Requirements

- Processor 32/64 bit, 1 GHz

- Microsoft Windows® Vista/7/8

- 8 GB RAM

- 3 GB free hard disk space

- VGA or SVGA display, 100 % IBM compatible with 2 MB Video RAM (VRAM)

- CD-ROM drive

# NetDAQ® Series



Fluke NetDAQ®

## NetDAQ® is designed to fit into your system

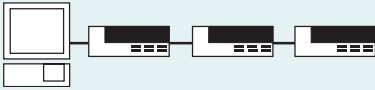
The versatile NetDAQ system offers flexible options for data distribution.

- **Configure a dedicated system.** Simply connect your NetDAQ unit to your desktop or notebook PC for quick, easy data collection.
- **Add NetDAQ® units to your high-speed network.** Adding NetDAQ units directly to your existing network saves the time and expense of setting up large dedicated networks and enables you to implement distributed applications with NetDAQ units in multiple locations enabling multiple PC users to monitor data in real time as it is collected.
- **Add a dedicated NetDAQ® system to your company network.** Isolate your data acquisition application from the rest of the network while still allowing multiple-user viewing. This prevents your data acquisition application from being hampered by network operations and protects it from network failure.
- **Quick results you can rely on.** The NetDAQ system supports 3,000 rps from multiple instruments ensuring high throughput for all units. Plus on-board memory provides a data buffer in case network traffic prevents timely delivery of time-stamped data to the host PC.

## Key NetDAQ® features

- Expandable systems from 20 to 2000 analog channels
- High accuracy readings, up to 0.01 %
- High throughput, to support up to 1,000 ch/sec
- Distributed design enables multiple users to view data remotely with standard browsers
- Replaces chart recorders
- **Computed channels save time.** In addition to its 20 analog input channels, each NetDAQ unit supports 10 computed channels. The computed channels perform custom calculations using addition, subtraction, multiplication, division, log, natural log, exponent, square root, absolute value, and integer functions. Math channels feature the same alarm capability as analog channels which saves having to perform separate post calculations on channel data. It is also especially useful for monitoring and alarming on real-time calculated values such as power, flow, volumes, pressure, and more.
- **Count more than four billion "on/off" events.** Both NetDAQ models include a totalizer input channel which is continuously sampled and recorded.





A system of up to 2000 channels can be configured by connecting multiple NetDAQ units to one PC

### NetDAQ® 2640A

The Fluke NetDAQ 2640A delivers extremely high accuracy and resolution to provide calibration-level performance:

- Measures up to 300 V at up to 100 rps
- Offers 0.01 % V dc—0.3 °C TC accuracy
- Scans from 6 to 100 channels per second

### NetDAQ® 2645A

The NetDAQ 2645A delivers higher speed data acquisition making it ideal for applications that require more dynamic signal capture.

- Directly measures multiple inputs of up to 50 V at 1,000 rps
- Delivers 0.01 % V dc - 0.3 °C TC accuracy
- Scans 48 to 1,000 channels per second



Fluke NetDAQ® rear panel (Universal Input Module removed)

### Choose the NetDAQ Model that matches your requirements

Model	Reading/sec (Max)	Resolution (Volts dc)	Max. Input (Volts dc)	Basic TC Accuracy (Type T)
2640A	100	0.3 mV	150/300	0.5 °C
2645A	1,000	3.0 mV	50	0.7 °C

### Distributed data acquisition where and when you need it

A Fluke NetDAQ networked data acquisition system is a powerful combination of hardware and FlukeDAQ software (2680A-APSW) that seamlessly delivers data directly over your network. These systems, along with optional Trend Link software, enable multiple users to view just the information they need in real time, from anywhere on the system. View current, temperature, voltage, and more on the same screen at the same time. You can also monitor several units simultaneously making it ideal for small-to-medium sized equipment monitoring, product testing, and process validation applications. A NetDAQ unit can also be used as a portable dedicated system connected to a notebook computer for maintenance, product validation, research, and troubleshooting applications.

Combine from one to twenty NetDAQs into an integrated system of up to 2000 channels within FlukeDAQ software. Two NetDAQ models offer a choice of scan speeds of 100 channels/second or 1,000 channels/second, and accuracy (up to 0.01 %) to meet your needs. And both NetDAQ models use Fluke’s patented Universal Input Module which accepts any combination of analog input types for each of its 20 channels—without requiring external signal conditioning.

With all these capabilities NetDAQ addresses the escalating need for measurement, recording, and analysis tools that enable you to improve quality, maximize process efficiency and meet regulatory requirements.

# NetDAQ specifications

- **Universal input module:** Connect 20 analog inputs of virtually any sensor type without external signal conditioning
- **NetDAQ interfacing:** Ethernet network cabling. RS-232 input for calibration
- **External trigger:** Activate scanning with real-world events
- **Totalizer:** Count on/off events, value reported with every scan
- **Alarm outputs:** Flag out-of-limit conditions to external devices
- **Power:** Accepts 107 to 264 V ac, or 9 to 16 V dc. Can operate from both simultaneously for fail-safe power operation

## NetDAQ® 2640A/2645A

### Channel capacity

Analog inputs: 20

### Measurement rate (2640A)

Slow: 6 Rdgs/s nominal

Medium: 41 (50 Hz), 48 (60 Hz)

Rdgs/s nominal

Fast: 100 Rdgs/s nominal (5 Rdgs/s

for V ac nominal, 140 Rdgs/s on

300 Ω range, 37 Rdgs/s on 3 MΩ range)

### Measurement rate (2645A)

Slow: 45 (50 Hz), 54 (60 Hz) Rdgs/s nominal

Medium: 200 Rdgs/s nominal

Fast: 1000 Rdgs/s nominal (5 Rdgs/s

for V ac nominal, 370 Rdgs/s on

300 Ω range, 44 Rdgs/s on 3 MΩ range)

### Analog to digital converter

2640A: Multi-slope type, linear to 18 bits

2645A: Multi-slope type, linear to 16 bits

### Common mode rejection

2640A: AC: ≥120 dB (50/60 Hz, ±10.1 % max 1 kΩ source imbalance); DC: ≥120 dB

2645A: AC: ≥100 dB (50/60 Hz, ±10.1 % max 1 kΩ source imbalance); DC: ≥100 dB

### Normal mode rejection

50 dB @ 50/60 Hz, ±10.1 % Common mode and normal mode voltage maximum

2640A: 300 V dc or V ac rms (channels 1,11); 150 V dc or V ac rms (all other channels)

2645A: 50 V dc or 30 V ac rms (all channels)

## Model 2640A NetDAQ®

Input	Range	Resolution	Accuracy (3-Sigma) <sup>1</sup>
DC Volts	90 mV to 150/300 V	0.3 μV to 1 mV	0.01 %
AC Volts <sup>2</sup>	300 mV to 150/300 V	10 μV to 10 mV	0.3 %
Resistance	300 Ω to 3 MΩ	1 mΩ to 10 Ω	0.015 %
Frequency	15 Hz to 1 MHz	0.01 Hz to 100 Hz	0.05 %
RTD (Pt100)	-200 to 600 °C	0.003 °C	0.06 °C
<b>Thermocouples</b>			
J	-100 °C to 760 °C	0.02 °C	0.35 °C
K	-100 °C to 1372 °C	0.02 °C	0.4 °C
T	-100 °C to 400 °C	0.02 °C	0.3 °C
<i>Other Thermocouple types R, S, B, C, E, N</i>			

## Model 2645A NetDAQ®

Input	Range	Resolution	Accuracy (3-Sigma) <sup>1</sup>
DC Volts	90 mV to 50 V	3 μV to 10 mV	0.02 %
AC Volts <sup>2</sup>	300 mV to 30 V	10 μV to 1 mV	0.3 %
Resistance	300 Ω to 3 MΩ	10 mΩ to 100 Ω	0.02 %
Frequency	15 Hz to 1 MHz	0.01 Hz to 100 Hz	0.05 %
RTD (Pt100)	-200 °C to 600 °C	0.03 °C	0.16 °C
<b>Thermocouples</b>			
J	-100 °C to 760 °C	0.2 °C	0.7 °C
K	-100 °C to 1372 °C	0.2 °C	0.8 °C
T	-100 °C to 400 °C	0.2 °C	0.7 °C
<i>Other Thermocouple types R, S, B, C, E, N</i>			

Detailed specifications are available on request.

<sup>1</sup> Total instrument accuracy for 90 days following calibration and ambient temperature range of 18 to 28 °C. Includes A/D errors, linearization conformity, initial calibration error, isothermality errors, reference junction conformity and power line voltage effects within the range from 107 V ac to 264 V ac.

<sup>2</sup> Accuracies for crest factor to 2.0.

### Isolation

2640A: Analog input to analog input, and analog input to any digital input; meets IEC measurement category II, ANSI/ISA 61010-1 (82.02.01) :2004, CAN/CSA C22.2 No. 61010-1:2004 for 150/300 V reinforced

2645A: Analog input to any digital input; meets IEC measurement category II, ANSI/ISA 61010-1 (82.02.01) :2004, CAN/CSA C22.2 No. 61010-1:2004 for 150/300 V reinforced

### Current measurements

AC or dc current measurements up to 100 mA may be accomplished using the 2620A-101 10 Ω Current Shunt Strip

### Totalizing input

DC coupled, non-isolated, max +30 V, min -4 V

Max count: 4,294,967,295

Minimum signal: 2 V peak

Threshold: 1.4 V

Rate: 0-5 kHz (debounce off)

Hysteresis: 500 mV

Input debouncing: None or 1.66 ms

## Ordering information

### 2640A

NetDAQ Data Acquisition Unit (100 rps)

### 2645A

NetDAQ Data Acquisition Unit (1,000 rps)

Includes: Instrument, FlukeDAQ Software, Universal Input Module, manual on CD, power cable.

### Application software

#### 2600A-904

Trend Link for Fluke

#### 2680A-APSW

Fluke DAQ Software and extra license (one license included with 2680 Series, 2640A, 2645A)

### Options and accessories

#### 2620A-100

Extra Universal Input Module

#### 2620A-101

Current Shunts, 10  $\Omega$ , for 0 to 100 mA, Qty (12)

#### Y2641

19 in Rack Mount Kit, Single/Dual

### Digital inputs

Threshold: 1.4 V

Hysteresis: 500 mV

Maximum input: +30 V, min -4 V; non-isolated

### Digital/master alarm outputs

The open collector output lines are non-isolated, TTL compatible

### Digital I/O and alarm outputs

8 total; totalizer: 1

### Alarm associations

Digital I/O may be used as a digital input or alarm status output (associated with any input channel or channels)

### Trigger input

Minimum pulse: 5  $\mu$ s

Minimum latency: 2 ms

Repeatability: 1 ms

Input "High": 2.0 V min, 7.0 V max

Input "Low": -0.6 V min, 0.8 V max non-isolated, contact closure and TTL compatible

### Clock

Accurate to within 1 minute/month for 0  $^{\circ}$ C to 50  $^{\circ}$ C range

### Power

107 V ac to 264 V ac, 50 Hz or 60 (<15 watts), or 9 to 16 V dc (<6 watts). (If both sources are applied simultaneously, the greater of ac or dc is used.) At 120 V ac the equivalent dc voltage  $\sim$ 14.5 V.

### Temperature, humidity (non-condensing)

Operating:

-20  $^{\circ}$ C to 28  $^{\circ}$ C,  $\leq$ 90 % RH

28  $^{\circ}$ C to 40  $^{\circ}$ C,  $\leq$ 75 % RH

40  $^{\circ}$ C to 60  $^{\circ}$ C,  $\leq$ 50 % RH

Storage: -40  $^{\circ}$ C to 70  $^{\circ}$ C, 5 to 95 % RH

### Altitude

Operating: 2000 m (6,500 ft)

Storage: 12,200 m (40,000 ft)

### Electromagnetic Interference (EMI)

Passes FCC EMI Class B Equipment, Vfg. 243, European Norms EN50081-1 and EN50082-1, CE approved

### Safety

Complies with applicable sections of CE, IEC/EN 61010-1:2001, ANSI/ISA-61010-1 (82.02.01) :2004, CAN/CSA C22.2 No. 61010-1:2004, and CSA standards as noted under "Isolation"

### Weight

3.7 kg (8.2 lbs)

### Dimensions (HxWxD)

9.3 cm x 21.6 cm x 39.4 cm  
(3.67 in x 8.50 in x 15.50 in)

### Battery life

10 years minimum for real-time clock

### Interfaces

Ethernet: Conforms to IEEE 802.3 Ethernet standard. Compatible with 10Base-T standards. Uses TCP/IP protocol. RS-232C: For calibration only. The optional NetDAQ Service Manual provides step-by-step calibration instructions.

### Data buffer memory

Each scan consists of computed channels, time stamp, all defined analog input channels, the status of the eight digital I/O, and the totalizer count. The number of stored scans varies with the number of channels configured ranging from 6400 scans for 1 configured channel to 1,896 scans for 20 configured channels.

Fluke data acquisition systems are supported by a wide variety of optional software and development tools to support almost any research or industrial application.



# Fluke DAQ Software

The Fluke DAQ application is praised by users for its versatile handling of data acquisition and logging. Improved trending, file handling, web interface, web control, and convenient print functions for charts make this version of Fluke DAQ a feature-rich program. Fluke DAQ 6.0 is truly a program you can trust with your important data and analysis needs.

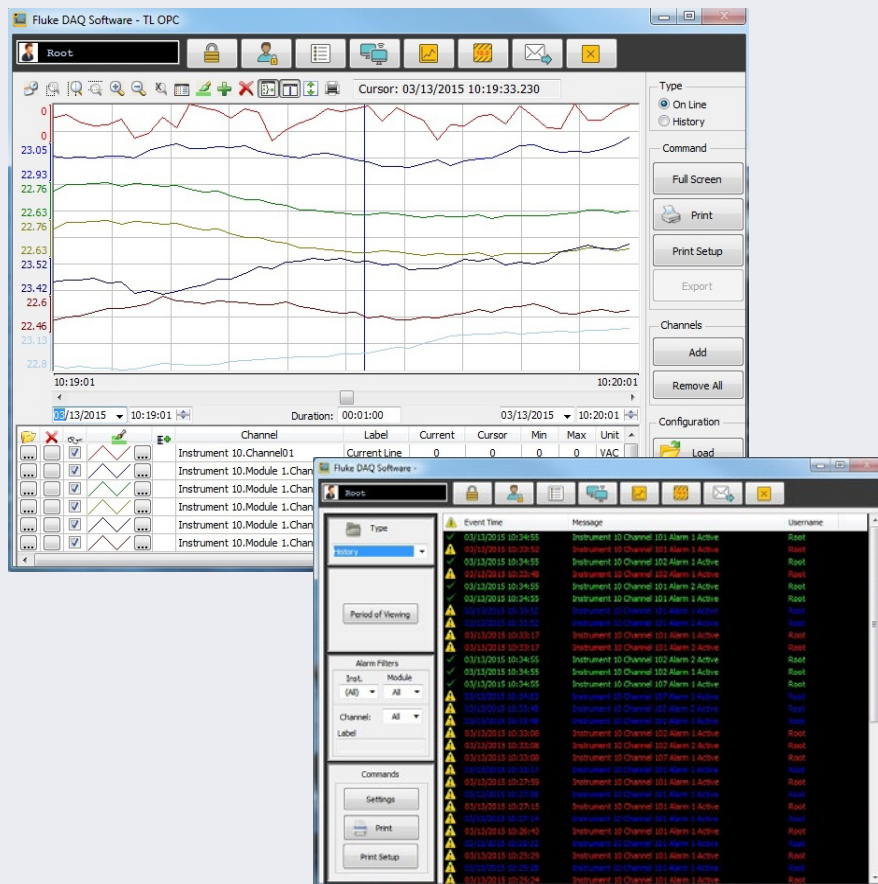
Fluke DAQ comes in two basic versions, Full and Lite, to accommodate your data collection needs and best match program features to your instrument usage.

## 2686A-APSW (Full)

One full version license is included with the purchase of the 2640A, 2645A or 2680A Series mainframe. This version has all the features you might expect from a distributed Ethernet-based instrument system including remote web viewing, OPC connectivity, exporting of historical chart data and other premium system type features.

## 2680A-APSW/L (Lite)

The Lite version is included with each 2638A Data Acquisition Unit and 1586A Precision Temperature Scanner. The Lite version realizes the need for simple data collection and a file creation program typical of the usage model of smaller stand-alone data logging systems, as well as the advanced user interface of these models, which minimizes the need for an extensive computer interface. Single instrument operation, configuration and data file creation are the focuses of this Lite version for quick and easy .CSV file creation and retrieval. If you find you need more advanced features for a larger system at a later date, upgrades are easily available to a Full version.



## Fluke DAQ 6.0 key features (Full version)

- Easy multi-unit configuration for any mix of 2638A Hydra Series III, 1586A Super-DAQ, NetDAQ or 2680 Series models
- Full screen trend charting of up to 32 channels with zoom, print and scaling functions
- Built-in OPC server software for sharing Fluke DAQ data with popular client programs
- Advanced trend display and viewing tools with print functions
- Logon security features
- Auto start on power interrupt settings
- Primary/secondary configurations available
- Alarm logging history with acknowledgement features
- Four web clients for remote viewing and control of systems using secure login
- Automated email of alarm alerts
- Over 2000-channel capability

## Version feature comparison

Features	2680A-APSW (Full)	2680A-APSW/L (Lite)
<b>Multi-instrument configuration and operation</b>	Unlimited instruments (to 2000 channels)	One instrument per configuration
<b>Configuration and CSV data file creation</b>	•	•
<b>Trend chart and number of viewable trends</b>	32 trends	4 trends
<b>Web connect thin client</b>	4 instances	
<b>OPC and DDE</b>	OPC, DDE	DDE
<b>Automated email alerts</b>	•	
<b>Alarm page view</b>	•	•
<b>History chart export</b>	•	
<b>One license included with the following mainframe products</b>	2640A 2645A 2680A 2686A	2638A 1586A
<b>Trend Link Interface</b>	•	

### System requirements

Operating system (32 or 64 bit)

- Microsoft Windows Vista Service Pack 2
- Microsoft Windows 7 Service Pack 1
- Microsoft Windows 8 (excluding RT)
- Microsoft Windows Server 2003 Service Pack 2
- Microsoft Windows Server 2008 Service Pack 2
- Microsoft Windows Server 2008 R2 Service Pack 1
- Microsoft Windows Server 2012

Memory available: 8 GB

Processor: 1 GHz or higher

Available disk space: 3 GB or larger recommended

Application file size: 429 MB

### The versatile and powerful 2680A-APSW

**Easy instrument setup.** Simply connect your 2638A, 1586A, NetDAQ or 2680A Series to your computer and your current hardware configuration will pre-populate in the configuration setup area, ready to edit if needed. The simple copy-and-paste feature makes quick work of setting up multiple channels with similar inputs.

**Trend chart.** View up to 32 trends on one graph, with the ability to save and load historical charts and add new chart formats. Chart controls for auto scale, fixed scale, horizontal and vertical zoom and grid division control.

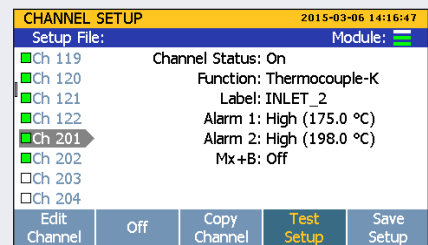
**Chart data export.** Fluke DAQ makes it easy to extract data from any portion of your historical chart data. Simply select the data you want and export chart data to a convenient CSV file format.

**Print capability.** Print trend charts and alarm status information from a local PC or from the Fluke DAQ web view.

**Web view.** In addition to current readings, the web view feature allows users to display trend charts and the alarm screen in a web browser. Four web clients allow password secure connections from up to four remote users simultaneously.

**Web control.** Instrument scanning can be started and stopped remotely from the Web view screen in a browser, using one of the four thin web clients within Fluke DAQ.

**Alarm pages.** The Fluke DAQ alarm page gives the operator a full page view of historical and present alarm conditions. The operator has full control over alarm acknowledgment function and can select filters for viewing specific channel alarm history by channel or date range. Alarm conditions may also be emailed to users for immediate notification of system status.



**Off-line operation.** Instruments can be left scanning when the Fluke DAQ 6.0 application shuts down. Start the program again and Fluke DAQ 6.0 software reconnects to your instruments and resumes data retrieval and control.

**Import/export configuration files.** The Fluke DAQ 6.0 software configuration is saved in XML format, which allows the configuration to be easily imported, exported and edited.

**Automatic start scan.** Fluke DAQ 6.0 can be easily set to start scanning automatically when your computer is started. This allows unattended operation or automatic scan resuming after a power failure.

**Multiple language support.** Version 6.0 speaks your language and can be switched from one language to another during operation. Languages supported in Fluke DAQ include English, Spanish, Swedish, Russian, Korean, Japanese, Italian, German, French and Chinese.

## Ordering information

### 2680A-APSW v6.0

Fluke DAQ 6.0 Application Software for Fluke data acquisition products (included with 2640A, 2645A, 2680A and 2686A)

### 2680A-APSW/L

Fluke DAQ 6.0 Lite-Basic Data Collection Software (included with 2638A and 1586A)

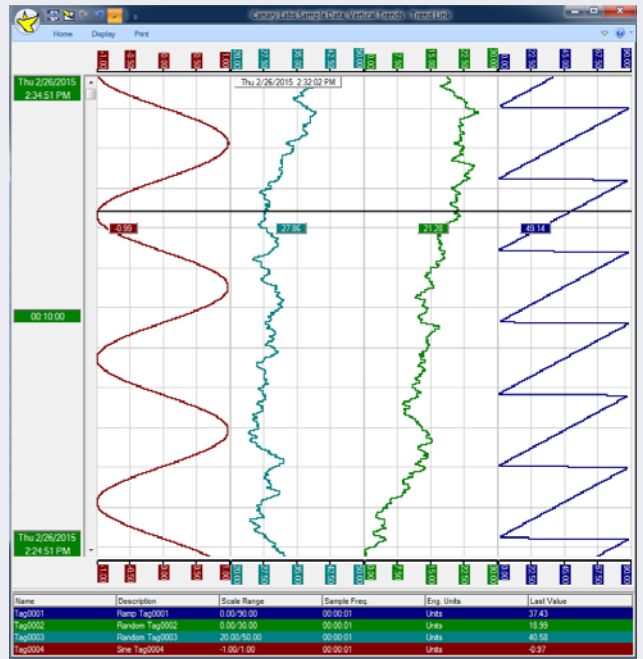
### 2680A-APSW/LU

Upgrade from Lite to Full Version V6.0

### 2680A-APSW/U

Upgrade from 2680A-APSW Version 3, 4 or 5 to Full version 6.0

# Trend Link for Fluke software



## Gain advanced trending capabilities

Optional Trend Link for Fluke software is used in conjunction with FlukeDAQ application software. Trend Link makes it easy to:

- Review real-time data in the context of historical data for performance comparisons
- Automatically view statistics on any channel and compare multiple channels from different time periods
- Zoom in on a particular time span for closer analysis
- View multiple windows—each featuring different process parameters—in real time
- Calculate basic statistics such as mean and standard deviation for any trend
- Create X-bar R charts and X-Y scatter diagrams for statistical analysis
- Import data directly into spreadsheet programs from trend plots

## Quickly find specific data

With Trend Link you can quickly scroll through volumes of historical and real-time data looking for key events or changes in the process. The dead-banding feature lets you limit recording to only those readings outside of the range of your normal process limits, saving you valuable disk space. Trend Link time stamps data with millisecond resolution so you can find just the data you're looking for. Then you can compare multiple traces on the same screen or zoom in on a particular point in time.

## Document your results

Cut and paste the data and trend plots you generate with Trend Link software into spreadsheet and word processing programs to generate presentation-quality reports. Or print plots directly for hard copy documentation.



## Fluke measurement specification philosophy

The accuracy specifications for the Fluke 2680 Series, 2638A Hydra Series III, and NetDAQ Series instruments are calculated conservatively so that they include three standard deviations from the nominal value—this is referred to as 3-Sigma. More than 99.7 % of the instruments produced will perform within the error limits. Rigorous screening and testing procedures catch and correct the three out of 1,000 instruments which could have fallen outside their published specifications.

Many other products use a “root-sum-square” scheme, or only specify the error band within one standard deviation (1-Sigma) of nominal. This method produces a specification that appears to be more accurate, but the resulting “typical” specifications correctly characterize only ~66 % of the instruments produced. This method is kind of like knowing how accurate “most of the instruments” will be. The 3-Sigma specifications for the 2680 Series, Hydra, and NetDAQ tell you how accurate ALL of the instruments will be. Note: Listed specifications are summary in nature. Accuracies listed are most favorable within the stated range. You may obtain detailed specifications at [www.flukecal.com](http://www.flukecal.com)

For complete product specifications or information on other Fluke products, contact your local Fluke sales representative.

## Customer support

Choosing a data acquisition system that meets your specifications is only the first step in making a smart equipment investment. You also need to choose a company that can help you get up and running quickly and easily and that will support you throughout the life of the system. Fluke has addressed these issues by assembling a wide variety of services that are solidly backed by our sales and application support teams, world-wide service centers, and state-of-the-art parts supply system. Our offerings range from comprehensive service programs and technical training to custom programming and system consulting.

## Service CarePlans

Fluke offers various service plans to suit your individual needs. SilverCarePlans are warranty extensions that add years onto your new product warranty. Gold CarePlans provide extended warranty coverage and annual calibration for your product and covers return freight. CarePlans are available for all Fluke Data Acquisition products as well as most other Fluke products. To learn more go to [www.flukecal.com/support/service-plans](http://www.flukecal.com/support/service-plans). Locations to cover necessary repairs and performance testing, including parts, labor, and return surface freight costs. Warranty extensions may not be available in all countries. Contact your local Fluke sales office for specific details.



**Fluke.** Keeping your world up and running.®

**Fluke Corporation**  
PO Box 9090,  
Everett, WA 98206 U.S.A.

**Fluke Europe B.V.**  
PO Box 1186, 5602 BD  
Eindhoven, The Netherlands

**For more information call:**

In the U.S.A. (800) 443-5853 or Fax (425) 446-5116  
In Europe/M-East/Africa +31 (0)40 267 5100 or Fax +31 (0)40 267 5222  
In Canada (800)-36-FLUKE or Fax (905) 890-6866  
From other countries +1 (425) 446-5500 or Fax +1 (425) 446-5116  
Web access: <http://www.fluke.com>

©2007-2015 Fluke Corporation. Specifications subject to change without notice. NetDAQ is a trademark of Fluke Corporation. Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation. Printed in U.S.A. 3/2015 1267610e-en

Modification of this document is not permitted without written permission from Fluke Corporation.