

DAQ-10600

Data Acquisition System

FEATURES

- Large 5”TFT Color Display
- 8-slot Mainframe with Built-in 6 ½ digit DMM
- Basic 0.0035 % DCV Accuracy
- 10 Selectable Switch Modules
- Up to DC 1000 V Voltage Measurement (DAQ-919 module)
- Up to 450 Channels/s Scan Rate
- Up to 100 Kilo Points Internal Memory
- Measures and Converts 14 Different Input Signals :
  Temperature with Thermocouple, RTDs and Thermistor;
  DC/AC Volts; 2- and 4-wire Resistance; Frequency and Period;
  DC/AC Current and Capacitance; Direct and Bridge Strain
- USB Storage Supports Copy/Log Data in Standalone Operation
- Interfaces: Digit I/O, LAN, USB Host/Device and GPIB(Optional)
- Free PC Software Allows Easy Configuration and Control of Tests

GW INSTEK
Simply Reliable

Expand Your Data Acquisition Tentacles

The DAQ-10600 data acquisition system is a modularized data acquisition system with high flexibility and higher performance. The mainframe is equipped with 8 module slots and a built-in precision 6 1/2 digital DMM is the core of its test and measurement. 10 modules are available to meet different measurement needs. For the research and development of analyzing product characteristics or the production and manufacturing of system testing or fault diagnosis, a data acquisition system with flexibility and high performance can effectively fulfill different measurement requirements by expasion and change that make the overall test simpler , faster and more reliable.

The DAQ-10600 features a modular design, offering eight module slots and ten optional modules. These ten modules include eight shared with the DAQ-9600 and two dedicated modules. The modules include general-purpose modules (DAQ-900/DAQ-901), cmmon low-level modules (DAQ-903), matrix modules (DAQ-904), multi-function modules (DAQ-907), switching modules (DAQ-908), high-voltage high-current modules (DAQ-909), and DC 1000V high-voltage modules (DAQ-919), as well as dedicated general-purpose modules for the DAQ-10600 (DAQ-1000/1001). Users can combine these modules freely to meet their measurement needs. Because it has a built-in digital multimeter (DMM), it does not occupy slot space, thus maximizing the number of channels, expandable to a maximum of 240 two-wire channels, 320 single-ended channels, or 256 matrix crossover points.

The DAQ-10600 features a 5-inch graphic color display and concise function key design, allowing users to quickly and easily configure module channels in an intuitive way. Measurement data is presented in different formats, such as numerical values, bar graphs, trend graph and histogram to quickly check the measurement results. At the same time, the DAQ-10600 can convert 14 input signals, including voltage (AC/DC), current (AC/DC), temperature (RTD/thermocouple/thermistor), resistance (two-wire/four-wire), Strain (direct/bridge), frequency/period, and capacitance. The built-in 6 1/2 digital DMM provides basic accuracy of 0.0035% DC voltage, 0.05% AC voltage, and 0.01% resistance within a one-year calibration cycle

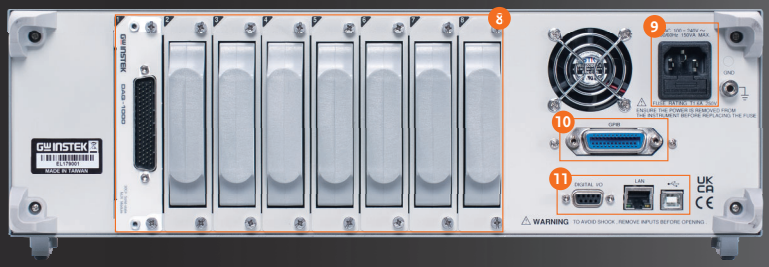
The DAQ-10600 supports measurement data storage, and the acquired data can be stored in the internal memory or directly recorded to a USB flash drive without connecting to a PC. For remote setting and control of data logging applications, the DAQ-10600 is equipped with LAN, USB and GPIB (optional), and provides free DAQ-Data Logger II software to simplify data collection and analysis, allowing users to easily collect data. In addition, the LAN interface can be used to configure measurements, define and execute scan lists through common web browsers (such as Chrome, IE). Users can monitor the measurement results no matter where they are as long as they are connected to the Internet.

The DAQ-10600 can meet the demand for data acquisition. Users can construct flexible signal routing and control functions through a variety of optional modules. With the built-in excellent measurement functions, including resolution, accuracy and speed, 14 different input signals can be easily measured to meet different application requirements. The DAQ-10600 is definitely a perfect combination of price and the test and measurement performance.

PANEL INTRODUCTION

CE | USB Host | USB Device | LAN | Digital IO | GPIB





1. Power Switch
2. USB Host
3. LCD Display
4. Setup
5. Knob
6. Increase / Decrease
7. Function Operation
8. Modules
9. Power Socket / Fuse hold
10. GPIB (Opt.)
11. Standard Interface
    (Digital IO / LAN / USB)

A. CUSTOMIZED CONFIGURATION FOR CHANGING NEEDS

Sensor & Transducer → Signal Conditioning → Multiplexer or Switching → Digital Multi-Meter → Display、Analysis Data & Test Report



Data Acquisition **Multiplexer** **Mainframe**

The DAQ-10600 provides 8 module slots, and all of which can be used to install and control selected modules. 10 different modules are available to meet different measurement needs. These modules include general-purpose modules, multi-function modules, matrix module and high-voltage and high-current module. Users can choose, mix and match these modules to obtain the functions as required.

The measurement channels of each module can be configured independently, including measurement function, range, speed and the advanced measurement functions such as offset compensation. The DAQ-10600 can provide up to 240 two-wire measurements, 320 single-ended measurements, or 256 matrix crosspoints in a half-rack, which saves work space and cost when completing complex and diverse measurement tasks.

B. PRECISE TEST AND MEASUREMENT



RANGE	-200 °C to 1820 °C	-200 °C to 600 °C	-80 °C to 150 °C	100 mV to 400 V	100 mV to 600 V	100 µA to 2 A
RESOLUTION	0.002 °C to 0.01 °C	0.002 °C	0.01 °C	0.1 µV to 1 mV	0.1 µV to 1 mV	100 pA to 1 µA
ACCURACY	0.2 °C	0.06 °C	0.1 °C	0.05%	0.0035%	0.10%

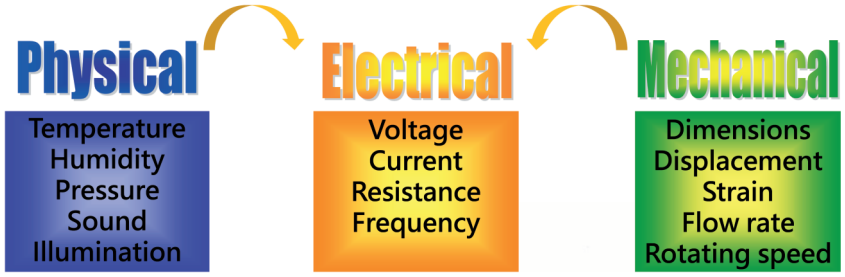


RANGE	1 µA to 2 A	100 Ω to 1000 MΩ	100 Ω to 1000 MΩ	1 nF to 100 µF	3 Hz to 300 kHz
RESOLUTION	1 pA to 1 µA	0.1 mΩ to 1000 Ω	0.1 mΩ to 1000 Ω	0.0001 nF to 0.01 µF	
ACCURACY	0.05%	0.01%	0.01%	2%	

The test and measurement core of the DAQ-10600 is a 6 1/2-digit DMM, which has the functions and performance of an industrial-grade DMM. It can measure and convert 14 different input signals. In addition to high resolution, it also provides basic accuracy of 0.0035% DC voltage, 0.05% basic accuracy of AC voltage and 0.01% basic accuracy of resistance (within one-year calibration period).

The functions of this DMM can be used with general-purpose modules (DAQ-1000/DAQ-1001/DAQ-900/ DAQ-901), multi-function module (DAQ-903), high-voltage and high-current module (DAQ-909) and DC 1000 V high-voltage module (DAQ-919). All multiplexer modules use "disconnect before connect" scanning to ensure that only one channel (or a pair of channels) is closed at a time.

C. BUILT-IN SIGNAL CONDITIONING



Transducer plays an important role in the application of data acquisition system, converting physical quantities into electronic signals, such as temperature measurement (temperature to voltage), and pressure and strain measurement (resistance to voltage). The DAQ -10600 does not rely on external or plug-in signal conditioning modules to handle functions other than DC voltage, which not only greatly reduces noise and errors generated by external wiring from entering the system, and improves reliability. At the same time, it does not have unnecessary cables, wire distribution boxes and signal conditioning components that makes configuration quicker and easier.

Taking temperature measurement as an example, the masurement of thermocouples is often accompanied by the Seebeck effect (the thermoelectric phenomenon in which the temperature difference between two different electrical conductors or semiconductors causes a voltage difference between two substances). The two modules of the DAQ-10600 (DAQ-1000 and DAQ-1001) have corresponding external junction boxes, DAQ-1000T and DAQ-1001T, which provide cold junction compensation to ensure maximum accuracy for all thermocouple measurement channels and avoiding the use of external cold junction extension cables, thus reducing noise and errors caused by external line connections to the system.

D. INTERNAL MEMORY AND USB STORAGE



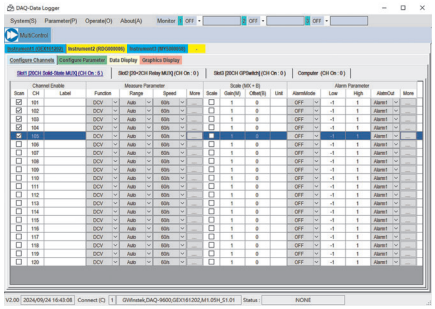
Varity Interfaces



USB Storage

The DAQ-10600 can store the measurement results without connecting to a PC with the non-volatile memory capacity of 100 k readings. Users can store the measurement results inside the system first, and then connect to a PC to collect data. In addition, for larger memory capacity, the DAQ-10600 also supports the USB storage function, which can directly record data to an external USB flash drive, or copy the data of the internal non-volatile memory to the flash drive for follow-up analysis.

E. SIMPLIFY DATA COLLECTION AND ANALYSIS



DAQ-Data Logger II

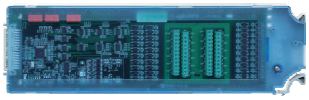
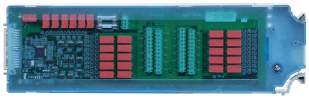
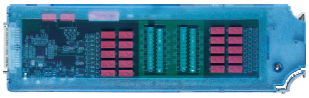
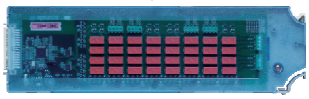
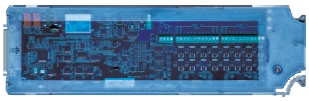
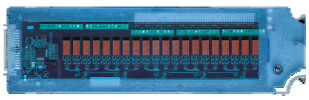
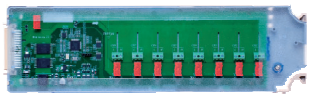


Web Control

The DAQ-10600 provides LAN, USB and GPIB (optional) to meet the most suitable and customary remote control interface requirements. Users can be benefitted from th free data collection software (DAQ-Data Logger II) to easily and quickly set up tests, acquire and store measurement data, and perform real-time observation and analysis during the measurement process.

If LAN is used as the interface, it can be easily connected to the company network to collect measurement data and store it in the central database. It can also use a common web browser (such as Chrome, IE) through the built-in graphical web interface to configure test and measurements, define and execute scan lists to reduce the time spent on programming.

F. THE INTRODUCTION OF MODULES

Module	Structure Diagram	Introduction
DAQ-900  (Suitable DAQ-10600/DAQ-9600)	**20-Channel Universal Multiplexer (Solid State Relay)** * Scanning speed up to 450 channels per second * 2-wire and 4-wire scanning * Built-in temperature cold junction reference * 120 V switching	DAQ-900 is a solid state relay module that provides two groups (A/B) of 10 2-wire channels each. All 20 channels are switchable to high (HI) and low (LO) inputs, providing fully isolated inputs for the built-in digital meter or external instruments. During 4-wire resistance measurements, the channels of group A are automatically paired with the channels of group B to provide power and sense connections. The module has a built-in cold junction reference, which can greatly reduce errors caused by thermal gradients when measuring thermocouples.
DAQ-901  (Suitable DAQ-10600/DAQ-9600)	**20+2 Channels Universal Multiplexer (Armature Relay)** * The scanning speed can reach 80 channels per second * 2-wire and 4-wire scanning * Built-in temperature cold junction reference * 300 V switching * The extra 2 channels can directly measure the current (1 A/per CH)	DAQ-901 is a comprehensive multiplexer for general scanning. The same module can mix 2-wire and 4-wire channels; at the same time, the additional 2 current input channels can be used for AC and DC current measurement without external shunt resistors (maximum 1 A per channel). DAQ-901, a total of 22 channels, intensive multi-function switching and a scan rate of up to 80 channels per second, is suitable for various data acquisition applications.
DAQ-903  (Suitable DAQ-10600/DAQ9600)	**40-Channel ingle-Ended Multiplexer** * The scanning speed can reach 80 channels per second * Single-wire switching is suitable for common-low applications	DAQ-903 can switch 40 single-wire inputs per module. It can be used for common-low applications such as battery testing, component characterization and desktop testing. The low-voltage connection is isolated from ground and can be floated up to 300 V. DAQ-903 also supports all 2-wire internal measurements except current.
DAQ-904  (Suitable DAQ-10600/DAQ-9600)	**4 x 8 2-Wire Matrix** * The switching speed 3 ms * 32 2-wire intersections * 300 V, 1 A switching * Up to 96 crosspoints (3 slots)	DAQ-904 module can provide the most flexible connection path between your DUT and the test system, allowing different test instruments to be connected to multiple points on the DUT at the same time. DAQ-904 can connect the rows and columns of multiple modules to build larger matrices, such as 8 x 8, 4 x 16...etc. Up to 96 crosspoints can be built in a single instrument.
DAQ-907  (Suitable DAQ-10600/DAQ-9600)	**Multifunction Module** * 16 bits of digital input and output * 100 kHz totalizer input * Two analog modes: ±12 V outputs or ±24 mA outputs	DAQ-907 provides great flexibility for various sense and control applications. It engages two 8-bit digital input and output ports, a 100 kHz gated totalizer, and two ± 12 V or ± 24 mA analog outputs— all on a single earth-referenced module. The digital inputs and totalizer input may be included in a scan. Alarm limits for the digital and totalizer inputs are evaluated continuously, capturing and logging alarm conditions even between scans. In addition, it has two additional channels (DMM INPUT and DMM CURRENT) that can sense output current when sourcing voltage or output voltage when sourcing current.
DAQ-908  (Suitable DAQ-10600/DAQ-9600)	**20-Channel Actuator/General-Purpose Switch** * SPDT (Form C) latching relays * 300 V, current 1 A actuation and control	DAQ-908, a general purpose switch module with 20 independent single pole double throw (SPDT) relays, can be used for power cycling in DUTs, control indicator lights and status lights. DAQ-908 can also activate external power relays and solenoid valves. While combining DAQ-908 with matrix and multiplexer modules, switching systems can be customized. 300 V and 1 A contact can handle up to 50 W, which is sufficient for multiple powerline switching applications.
DAQ-909  (Suitable DAQ-10600/DAQ-9600)	**8+2 Channels High Voltage High Current Multiplexer** * The switching speed 3ms * DC 600 V / AC 400 Vrms voltage , current 2 A * 2-wire and 4-wire scanning * Additional 2 channels can directly measure current (2 A/per channel)	DAQ-909 is a multiplexer specially designed for high voltage, providing 8 channels for DC 600 V / AC 400 Vrms voltage measurement. The additional 2 current input channels can be used for AC and DC current measurement, external shunt resistors are not required (maximum 2 A / per channel).
DAQ-919  (Suitable DAQ-10600/DAQ-9600)	**8-Channel DC 1000 V High Voltage Multiplexer** * DC voltage measurement only * The scanning speed up to 60 channels per second * Up to 1000 Vdc	DAQ-919 is a multiplexer specifically designed for DC voltage measurement, providing 8 channels for DC 1000 V voltage masurement; suitable for applications such as ±400 V or 800 V AI server power measurement in charging piles.
DAQ-1000  (Suitable DAQ-10600)	**30-Channel Universal Multiplexer (Solid State Relay)** * Scanning speed up to 450 channels per second * 2-wire and 4-wire scanning * 120 V switching	DAQ-1000 is a solid state relay module that provides two groups (A/B) of 15 2-wire channels each. All 30 channels are switchable to high (HI) and low (LO) inputs, providing fully isolated inputs for the built-in digital meter or external instruments. During 4-wire resistance measurements, the channels of group A are automatically paired with the channels of group B to provide power and sense connections. The module junction box (DAQ-1000T) has a built-in cold junction reference, which can greatly reduce errors caused by thermal gradients when measuring thermocouples.
DAQ-1001  (Suitable DAQ-10600)	**30-Channel Universal Multiplexer (Armature Relay)** * The scanning speed can reach 80 channels per second * 2-wire and 4-wire scanning * 300 V Switching	DAQ-1001 is a comprehensive multiplexer for general scanning. The same module can mix 2-wire and 4-wire channels; at the same time, DAQ-1001, a total of 30 channels, intensive multi-function switching and a scan rate of up to 80 channels per second, is suitable for various data acquisition applications. The junction box (DAQ-1001T) contents cold junction reference.

Function	Range (2)	Resolution	Input Resistance etc.	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient 0 °C to 18 °C/ 28 °C to 55 °C
DC Characteristics							
DC Voltage *1	100.0000 mV	0.1 µV	10 MΩ or > 10 GΩ	0.0030 + 0.0050	0.0040 + 0.0060	0.0050 + 0.0060	0.0005 + 0.0005
	1.000000 V	1 µV	10 MΩ or > 10 GΩ	0.0020 + 0.0006	0.0035 + 0.0007	0.0048 + 0.0007	0.0005 + 0.0001
	10.00000 V	10 µV	10 MΩ or > 10 GΩ	0.0015 + 0.0004	0.0020 + 0.0005	0.0035 + 0.0005	0.0005 + 0.0001
	100.0000 V	0.1 mV	10 MΩ ± 1%	0.0020 + 0.0006	0.0035 + 0.0006	0.0050 + 0.0006	0.0005 + 0.0001
	600.000 V	1 mV	10 MΩ ± 1%	0.0025 + 0.0020	0.0040 + 0.0020	0.0050 + 0.0020	0.0005 + 0.0001
Resistance *1 *3	100.0000 Ω	100 µΩ	1 mA	0.003 + 0.0030	0.008 + 0.004	0.010 + 0.004	0.0008 + 0.0005
	1.000000 kΩ	1 mΩ	1 mA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	10.00000 kΩ	10 mΩ	100 µA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	100.0000 kΩ	100 mΩ	10 µA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
	1.000000 MΩ	1 Ω	5 µA	0.002 + 0.0010	0.008 + 0.001	0.010 + 0.001	0.0010 + 0.0002
	10.00000 MΩ	10 Ω	500 nA	0.015 + 0.0010	0.020 + 0.001	0.040 + 0.001	0.0030 + 0.0004
	100.0000 MΩ	100 Ω	500 nA // 10 MΩ	0.300 + 0.0100	0.800 + 0.010	0.800 + 0.010	0.1500 + 0.0004
	1.000000 GΩ	1 kΩ	500 nA // 10 MΩ	2.500 + 0.0500	3.500 + 0.050	3.500 + 0.050	1.0000 + 0.0040
DC Current *1	1.000000 µA	1 pA	< 0.015 V	0.025 + 0.050	0.050 + 0.050	0.050 + 0.050	0.002 + 0.003
	10.00000 µA	10 pA	< 0.15 V	0.020 + 0.010	0.040 + 0.025	0.050 + 0.025	0.002 + 0.003
	100.0000 µA	100 pA	< 0.020 V	0.010 + 0.020	0.040 + 0.025	0.050 + 0.025	0.002 + 0.003
	1.000000 mA	1 nA	< 0.20 V	0.007 + 0.006	0.030 + 0.006	0.050 + 0.006	0.002 + 0.001
	10.00000 mA	10 nA	< 0.15 V	0.007 + 0.020	0.030 + 0.020	0.050 + 0.020	0.002 + 0.002
	100.0000 mA	100 nA	< 0.7 V	0.010 + 0.004	0.030 + 0.005	0.050 + 0.005	0.002 + 0.001
	2.000000 A	1 µA	< 0.8 V	0.180 + 0.020	0.200 + 0.020	0.200 + 0.020	0.005 + 0.001
Diode Test *1 *4	5.00000 V	10 µV	1 mA	0.002 + 0.030	0.008 + 0.030	0.01 + 0.030	0.001 + 0.002
AC Characteristics							Accuracy : ± (% of reading + % of range)
True RMS AC Voltage *5 *6 *7 *8	100.0000 mV	0.1 µV	3 Hz to 5 Hz	1.00 + 0.03	1.00 + 0.04	1.00 + 0.04	0.100 + 0.004
			5 Hz to 10 Hz	0.35 + 0.03	0.35 + 0.04	0.35 + 0.04	0.035 + 0.004
			10 Hz to 20 kHz	0.04 + 0.03	0.05 + 0.04	0.06 + 0.04	0.005 + 0.003
			20 kHz to 50 kHz	0.10 + 0.05	0.11 + 0.05	0.12 + 0.05	0.011 + 0.005
			50 kHz to 100 kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008
			100 kHz to 300 kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020
	1.000000 V to 400.000 V	1 µV to 1 mV	3 Hz to 5 Hz	1.00 + 0.02	1.00 + 0.03	1.00 + 0.03	0.100 + 0.004
			5 Hz to 10 Hz	0.35 + 0.02	0.35 + 0.03	0.35 + 0.03	0.035 + 0.004
			10 Hz to 20 kHz	0.04 + 0.02	0.05 + 0.03	0.06 + 0.03	0.005 + 0.003
			20 kHz to 50 kHz	0.10 + 0.04	0.11 + 0.05	0.12 + 0.05	0.011 + 0.005
			50 kHz to 100 kHz	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008
			100 kHz to 300 kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020
True RMS AC Current *5 *7 *9	100.0000 µA (Burden Voltage < 0.020 V)	100 pA	3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.06	1.00 + 0.06	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.06	0.35 + 0.06	0.035 + 0.006
			10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.06	0.10 + 0.06	0.015 + 0.006
			5 kHz to 10 kHz	0.18 + 0.04	0.18 + 0.10	0.18 + 0.10	0.035 + 0.006
	1.000000 mA (Burden Voltage < 0.020 V)	1 nA	3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.30 + 0.04	0.30 + 0.04	0.30 + 0.04	0.035 + 0.006
			10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.030 + 0.006
	10.00000 mA (Burden Voltage < 0.15 V)	10 nA	3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
			10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.18 + 0.04	0.18 + 0.04	0.18 + 0.04	0.030 + 0.006
	100.0000 mA (Burden Voltage < 0.7 V)	100 nA	3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.30 + 0.04	0.30 + 0.04	0.30 + 0.04	0.035 + 0.006
			10 Hz to 5 kHz	0.10 + 0.04	0.10 + 0.04	0.10 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.15 + 0.04	0.15 + 0.04	0.15 + 0.04	0.030 + 0.006
	2.000000 A (Burden Voltage < 0.80 V)	1 µA	3 Hz to 5 Hz	1.00 + 0.04	1.00 + 0.04	1.00 + 0.04	0.100 + 0.006
			5 Hz to 10 Hz	0.35 + 0.04	0.35 + 0.04	0.35 + 0.04	0.035 + 0.006
			10 Hz to 5 kHz	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.015 + 0.006
			5 kHz to 10 kHz	0.23 + 0.04	0.23 + 0.04	0.23 + 0.04	0.030 + 0.006
Frequency and Period Characteristics							Accuracy : ± (% of reading)
Frequency/Period *9 *10 *11 *12	100.0000 mV to 400.000 V	—	3 Hz to 5 Hz	0.1	0.1	0.1	0.1
			5 Hz to 10 Hz	0.05	0.05	0.05	0.035
			10 Hz to 40 Hz	0.03	0.03	0.03	0.015
			40 Hz to 1 MHz	0.006	0.006	0.006	0.015
Temperature Characteristics							
Temperature (RTD) *13	-200 °C to -100 °C	0.001 °C	—	—	—	0.09 °C	0.004 °C / °C
	-100 °C to -20 °C	0.001 °C	—	—	—	0.08 °C	0.005 °C / °C
	-20 °C to 20 °C	0.001 °C	—	—	—	0.06 °C	0.005 °C / °C
	20 °C to 100 °C	0.001 °C	—	—	—	0.08 °C	0.005 °C / °C
	100 °C to 300 °C	0.001 °C	—	—	—	0.12 °C	0.007 °C / °C
	300 °C to 600 °C	0.001 °C	—	—	—	0.22 °C	0.009 °C / °C
Temperature (Thermocouples)*13	-200 °C to +1000 °C	0.002 °C	E	—	—	0.2 °C	0.03 °C / °C
	-210 °C to +1200 °C	0.002 °C	J	—	—	0.2 °C	0.03 °C / °C
	-200 °C to +400 °C	0.002 °C	T	—	—	0.3 °C	0.04 °C / °C
	-200 °C to +1372 °C	0.002 °C	K	—	—	0.3 °C	0.04 °C / °C
	-200 °C to +1300 °C	0.003 °C	N	—	—	0.4 °C	0.05 °C / °C
	-50 °C to +1768 °C	0.01 °C	R	—	—	1 °C	0.14 °C / °C
	-50 °C to +1768 °C	0.01 °C	S	—	—	1 °C	0.14 °C / °C
	+350 °C to +1820 °C	0.01 °C	B	—	—	1 °C	0.14 °C / °C
Temperature (Thermistor) *13	–80 °C to 150 °C	0.01 °C	—	—	—	0.01 °C	0.003 °C / °C
Capacitance Characteristics							Accuracy : ± (% of reading + % of range)
Capacitance *14	1.000 nF	—	—	2.00 + 2.00	2.00 + 2.00	2.00 + 2.00	0.05 + 0.01
	10.00 nF	—	—	2.00 + 1.00	2.00 + 1.00	2.00 + 1.00	0.05 + 0.01
	100.0 nF	—	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01
	1.000 µF	—	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01
	10.00 µF	—	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	0.05 + 0.01
	100.0 µF	—	—	2.00 + 0.40	2.00 + 0.40	2.00 + 0.40	

NOTE: [1]. DC Specifications: In addition to the availability that requires warm-up of 60 minutes, it must be set in 5/s speed rate, A-Zero on.
[2]. The entire range of measurement will pass the set range by 20 % except the tests of 600 V DC, 400 V AC, 2 A DC, 2 A AC and diode.
[3]. These specifications apply to 4-wire ohms function or 2-wire ohms using math null for offset. Without math null, add 2 Ω additional error in 2-wire ohms function. The 100 MΩ and 1 GΩ ranges are for 2-wire only.
[4]. These specification apply to the voltage measured from input terminal. 1 mA test current is the typical value. The change of current source leads to the variation in buck of diode junction.
[5]. AC Specifications: It will be available after 60 minutes of warm-up, sine wave as well as 1/s speed rate.
[6]. Specifications are for sinewave input > 5 % of range. For inputs from 1 % to 5 % of range and < 50 kHz, add 0.1 % of range additional error. For 50 kHz to 100 kHz, add 0.13 % of range. The measurement range of 400 VAC is limited within the range of 7.5 x 10^7 Volt–Hz.
[7]. Three speed settings provided for low-frequency performance: 1/s (3 Hz), 5/s (20 Hz), 20/s (200 Hz). Additional errors will Not occur for the frequency greater than the filter settings.
[8]. Specifications are for sinewave input > 5 % of range, and is beyond 10 µA AC. For inputs from 1 % to 5 % of range, add 0.1 % of range additional error.
[9]. These specifications will be available after 60 minutes of warm-up and sine wave input, unless stated otherwise. These specifications apply to 1 s gate time.
[10]. These specifications are available when both sine wave and square wave input ≥ 100 mV. For the input of 10 mV to 100 mV, the% of reading error needs to be multiplied by 10 times.
[11]. The amplitude range is from 10 % to 120 % and is lower than 400 VAC.
[12]. The input ≥ 60 mV, for 300 kHz to 1 MHz, within 100 mV range.
[13]. The actual measurement range and test lead error will be constrained by the adopted test lead. The test lead accuracy adder covers all errors of measurements and ITS-90 temperature change.
[14]. Specifications are for film Capacitance inputs that are greater than 10 % range.

DAQ MODULES SPECIFICATIONS

Module Description	Type	Speed (CH/sec)	Max (Volts)	Max (Amps)	Bandwidth	Thermal (Offset)	Comments
DAQ-900 20 ch Multiplexer	2-wire solid-state (4-wire selectable)	450	120 V		10 MHz	< 4 µV	Built-in cold junction reference
DAQ-901 20 ch Multiplexer + 2 ch current	2-wire armature (4-wire selectable)	80	300 V	1A	10 MHz	< 4 µV	Built-in cold junction reference 2 additional current channels (22 total)
DAQ-903 40 ch Single-Ended Mux	1-wire armature (common low)	80	300 V		10 MHz	< 1 µV	No four-wire measurements
DAQ-904 4 x 8 Matirx	2-wire armature		300 V		10 MHz	< 1 µV	
DAQ-907 Multifunctiom Module	16 bits of digital input and output		42 V				Open drain
	100 kHz totalizer input		42 V		100 kHz		Input threshold selectable
	Two 18-bit analog outputs		± 12 V	± 24 mA			Max 40 mA total output per frame
DAQ-908 20 ch Actuator/General Purpose Switch	SPDT / form C		300 V			< 4 µV	
DAQ-909 8 ch HV Multiplexer + 2 ch current	2-wire armature (4-wire selectable)	60	DC 600 V AC 400 V	2A	10 MHz	< 4 µV	High voltage / high current channels
DAQ-919 8 ch HV Multiplexer	2-wire armature	60	DC 1 kV		10 MHz	< 4 µV	Attenuates to 10 V max
DAQ-1000 30 ch Multiplexer	2-wire solid-state (4-wire selectable)	450	120 V		10 MHz	< 4 µV	Built-in cold junction reference (DAQ-1000T)
DAQ-1001 30 ch Multiplexer	2-wire armature (4-wire selectable)	80	300 V		10 MHz	< 4 µV	Built-in cold junction reference (DAQ-1001T)

INTERNAL DMM MEASUREMENT FUNCTIONS SUPPORTED

	DAQ-900	DAQ-901	DAQ-903	DAQ-904	DAQ-907	DAQ-908	DAQ-909	DAQ-919 [5]	DAQ-1000	DAQ-1001
AC/DC Voltage	√ [2,3]	√	√				√	DC nly	√ [2,3]	√
AC/DC Current		√					√			
Freq./Period	√	√	√				√		√	√
2Wire Resistance	√ [1]	√	√				√		√ [1]	√
4Wire Resistance	√ [1]	√					√		√ [1]	√
Thermocouple	√	√					√ [4]		√ [4,6]	√ [4,6]
2Wire RTD		√	√				√			√
4Wire RTD		√					√			√
Thermistor		√	√				√			√
Capacitance		√	√				√			√

NOTE: 1. For the measurement of 100 Ω and 1 kΩ resistance ranges, it is recommended to use 4-wire resistance. The maximum resistance range of DAQ-1000/900 is 1 MΩ.
2. When measuring AC voltage, the input impedance will decrease with frequency. A source impedance of 5 Ω or less will maintain specification over frequency. A source impedance of 50 Ω or less will maintain specification in the 5 kHz range.
3. For DC voltage measurement, if the integration time is hort and the source impedance is high, more stabilization time may be required.
4. Need to use an extension cable moving the cold junction outside the chassis and manually set the reference temperature value.
5. The DAQ-919 implements a resistance-based attenuation method to support a maximum range of 10 V DC.
6. When using DAQ-1000T/1001T, it has a cold junction reference compensation function.

Specifications subject to change without notice. DAQ-10600_GD1_BH_202611

ORDERING INFORMATION

DAQ-10600	Data Acquisition System (USB/LAN/Digital IO)
DAQ-10600 with GPIB	Data Acquisition System (USB/LAN/Digital IO and opt. GPIB)
DAQ-900	20-Channel Universal Multiplexer
DAQ-901	20+2 Channels Universal Multiplexer
DAQ-903	40-Channel Single-Ended Multiplexer
DAQ-904	4 x 8 Matrix
DAQ-907	Multifunction Module
DAQ-98	20-Channel Actuator/General-Purpose Switch
DAQ-909	8+2 Channels High Voltage High Current Multiplexer
DAQ-919	8 ch HV Multiplexer
DAQ-1000	30 ch Universal Multiplexer
DAQ-1001	30 ch Universal Multiplexer
DAQ-1000T	Wiring box (DAQ-1000)
DAQ-1001T	Wiring box (DAQ-1001)

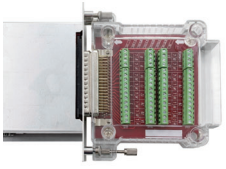
ACCESSORIES

Safety Instruction Sheet x 1, Power Cord x 1,
Screw Driver x 1, GTL-246 USB Cable x 1

OPTIONAL ACCESSORIES

GTL-248 GPIB Cable, Approx. 2000 mm

DAQ-1000
DAQ-1001



DAQ-1000T
DAQ-1001T
(Optional)

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