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Data Sheet

BK PRECISION

Benchtop Data Acquisition System

DAQ3120



The DAQ3120 Benchtop Data Acquisition System combines a 6-½ digit digital multimeter (DMM) and a data logger in a compact and modular design, offering a complete solution for acquiring, analyzing, and logging various physical measurements. A large 4.3" TFT color display and intuitive user interface simplify operation, while the 3-slot mainframe with a built-in 6-½ digit DMM ensures both flexibility and high-resolution measurement capability.

The system delivers high accuracy, with a basic DCV accuracy of 0.0035%. It provides signal conditioning and analog to digital conversion of 14 different input types, including temperature (using thermocouples, RTDs, and thermistors), DC/AC voltage and current, resistance, frequency, period, capacitance, and strain. This wide range of measurement capabilities allows the DAQ3120 to address diverse applications.

Five selectable switch modules enable users to customize the system to meet specific application requirements. The DM309 extends voltage measurement capabilities up to 600 VDC or 400 VAC and the DM300 provides scan rates of up to 450 channels/s. With a reading speed of 38400 readings/s, the DAQ3120 can capture high-speed phenomena and store up to 100 kpts of data in the non-volatile internal memory with time-stamps for all readings. Data logging and transfer are facilitated through the USB host port in standalone operation.

The DAQ3120 provides versatile connectivity options including LAN, USB (USBTMC and USBVCP), and optional micro GPIB, allowing seamless integration with PCs. The included DAQ-Data logger PC software offers an intuitive solution for test configuration and control, streamlining data acquisition workflows.

Applications

- Research & development
- Industrial automation and process monitoring
- Environment chamber monitoring
- Component inspection

USB | LAN | Micro-GPIB model option

Features and benefits

- 3-slot base unit with built-in 6-½ digit DMM
- Basic 0.0035% DCV accuracy
- 5 available input modules for customization
  - DM300 20-CH Solid-State Multiplexer
  - DM301 20-CH Multiplexer with 2 Current CH
  - DM303 40-CH Single-ended Multiplexer
  - DM304 4 x 8 Matrix Switch
  - DM309 High Voltage and Current Multiplexer
- Measures up to 600 VDC / 400 VAC
- Up to 450 channels/s scan rate
- Up to 120 channels per system
- 100 kpts reading non-volatile memory including time stamp
- Measures14 different input signals:
  - Temperature with thermocouples, RTDs, and thermistors
  - AC/DC voltage and current
  - Resistance with 2-wire and 4-wire
  - Direct strain and bridge strain
  - Frequency and period
  - Capacitance
- Large 4.3" TFT color display
- Digital I/O interface offers external triggering and alarm outputs
- Log or copy data directly to a USB drive
- Includes LAN, USB (USBTMC and USBVCP), and micro GPIB (-GPIB model only) interfaces
- Supports remote operation through free PC software or the built-in web interface

Populate the base unit with any combination of three modules.

Model	DM300	DM301	DM303	DM304	DM309
Channels	20	20 + 2	40	32	8 + 2
Scan Rate	450 ch/s	80 ch/s	80 ch/s	-	60 ch/s
Voltage	120 V	300 V	300 V	300 V	600 VDC/400 Vrms
Current	-	1 A	-	-	2 A

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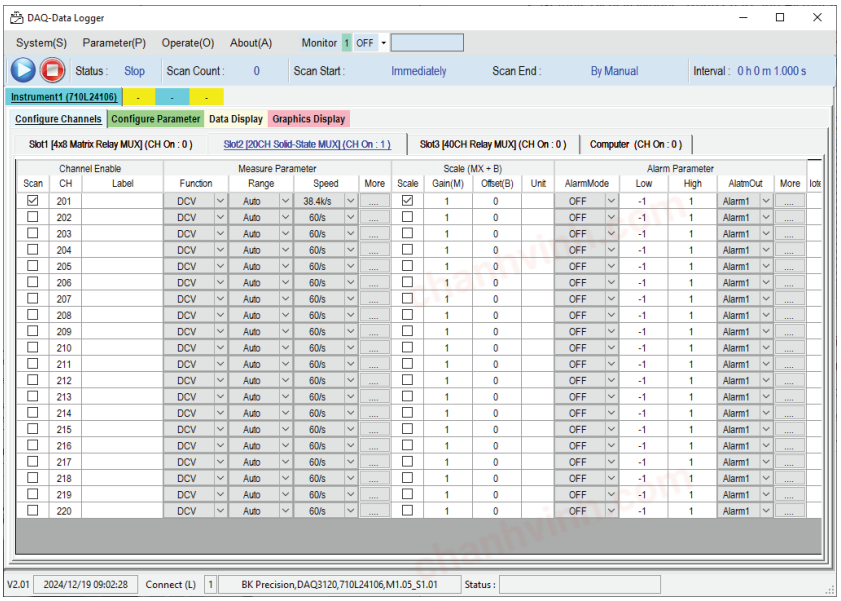
Benchtop Data Acquisition System
DAQ3120

Operating software

DAQ-Data Logger PC Software

The DAQ-Data Logger software provides real-time measurement and display capabilities, allowing users to monitor critical parameters as they happen. Connect up to four units simultaneously and manage multiple data streams effortlessly. Visualize the data with flexible display options including data tables, trend charts, and histograms.

The tabular formatting of the channels and parameters maximize screen space, making it easy to manage systems with large number of inputs. Save and load measurement parameters for quick setup and consistent analysis. This software offers a comprehensive solution for efficient and intuitive data acquisition and analysis.



Virtual Front Panel control via Web Interface

This instrument features a built-in web interface that enables users to operate the DAQ3120 remotely from any device on the network. The web interface provides a virtual front panel that mirrors the DAQ3120 and offers all the same functions like configuring channels, executing scans, and monitoring measurements.

Because the interface is built-in, there's no software to install. To connect, simply type the instrument's IP address or hostname into a Java-enabled web browser. Enhance security and control access by enabling password protection. This convenient web interface allows users to easily configure, control, and monitor the instrument remotely.

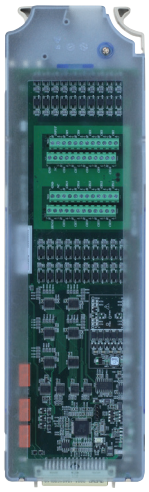


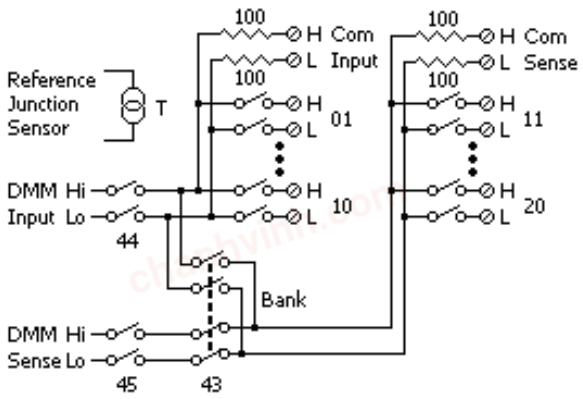
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Measurement Modules

DM300

The DM300 20-CH Solid-State Multiplexer is a general-purpose module with solid state relays for achieving scanning speeds up to 450 channels per second and a maximum input of 120 V. This module provides 20 channels arranged in two 10-CH banks with 2-wire inputs. All channels switch both high and low lines, providing fully isolated inputs for the internal DMM or external instruments. During 4-wire measurements, channels from bank 1 are paired with channels from bank 2 to provide source and sense connections.



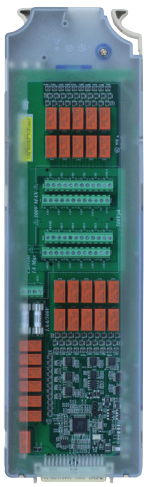


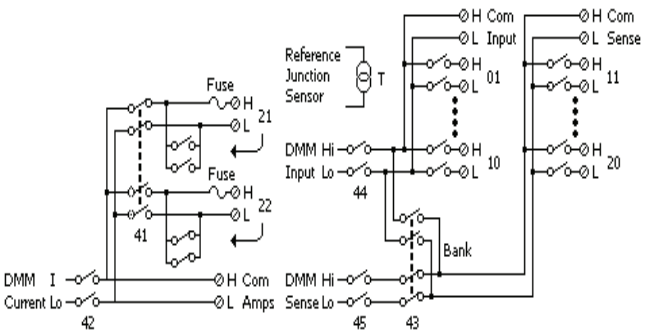
Features and benefits

- Scanning speed up to 450 channels per second
- 2-wire and 4-wire measurements
- Built-in cold junction reference for thermocouples
- 120 V maximum input voltage and fully isolated inputs

DM301

The DM301 20-CH Multiplexer with 2 current channels is the most versatile module with armature relays for achieving a maximum input of 300 V and a scanning speed of 80 channels per second. The two additional current channels measure up to 1 A each without the need for external shunts. Similar to the DM300, the 20 inputs are split into two banks with a switch to make 4-wire measurements. Both 2-wire and 4-wire channels can be mixed on the same module.



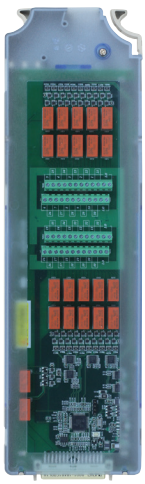


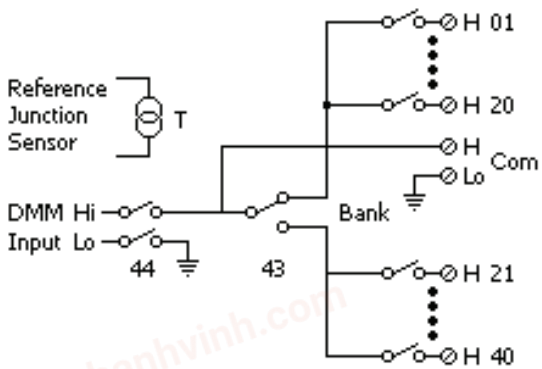
Features and benefits

- Scanning speed up to 80 channels per second
- 2-wire and 4-wire measurements
- Built-in cold junction reference for thermocouples
- 300 V maximum input
- 2 extra channels for direct current measurements up to 1 A each

DM303

The DM303 40-CH Single-Ended Multiplexer is the highest density module with 40 single-wire inputs using armature relays for achieving scanning speeds up to 80 channels per second. All inputs connect to a common signal ground, making it suitable for applications in battery testing, component characterization, and benchtop testing. The common signal ground line is isolated from ground and can be floated up to 300 V. This module also supports 2-wire internal measurements except current.





Features and benefits

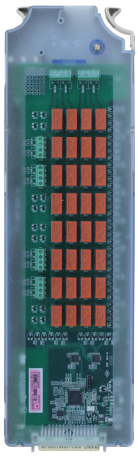
- Scanning speed up to 80 channels per second
- Single-wire switching for common low applications
- Supports 2-wire measurement (except current)
- Channel-to-ground isolation

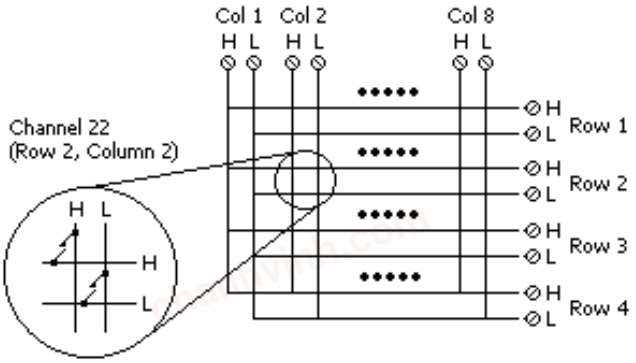
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Measurement Modules (continue)

DM304

The DM304 4 x 8 Matrix is a dedicated switch module providing up to 32 cross-points in a 4 row by 8 column matrix. This module allows different test equipment to connect to multiple points on the device under test (DUT) at the same time. Additional DM304 modules can be wired together to expand the number of rows or columns, reaching up to 96 cross-points.





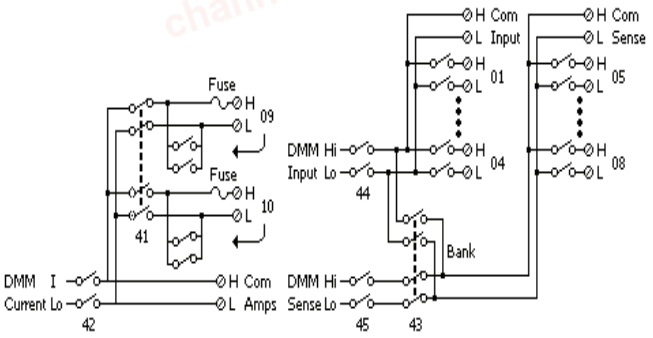
Features and benefits

- 32 2-wire cross-points
- 3 ms switching speed
- 300 V and 1 A maximum
- Expandable to 96 cross-points

DM309

The DM309 8-CH High Voltage Multiplexer with 2 Current Channels increases the maximum measurable voltage from 300 to 600 VDC or 400 Vrms. The 2 additional current channels handle DC and AC measurements up to 2 A without the need of external shunts. For added protection, each current channel connects to a fuse conveniently located within the module. This module supports thermocouple measurements as well, provided there is an external cold junction reference available.





Features and benefits

- Scanning speed up to 60 channels per second
- 600 VDC or 400 Vrms maximum input
- 2-wire and 4-wire measurements
- 2 extra channels for current measurements up to 2 A each

Measurement Modules	DM300	DM301	DM303	DM304	DM309
No. of Channels	20	20 + 2 current	40 single-ended	32 cross-points	8 + 2 current
Switching	2-wire solid-state	2-wire armature	Single-wire armature	2-wire armature	2-wire armature
Speed (ch/s)	450	80	80	-	60
Max. Voltage	120 V	300 V	300 V	300 V	600 VDC/400 Vrms
Max. Current	-	1 A	-	-	2 A
Bandwidth	10 MHz	10 MHz	10 MHz	10 MHz	10 MHz
Thermal Offset	< 4 μV	< 4 μV	< 1 μV	< 1 μV	< 4 μV
Measurements					
AC/DC Voltage	√	√	√	-	√
AC/DC Current	-	√	-	-	√
Frequency/ Period	√	√	√	-	√
Resistance	2-wire / 4-wire	√	√	-	√
Thermocouple	√	√	-	-	√
RTD	-	√	2-wire	-	√
Thermistor	-	√	√	-	√
Capacitance	-	√	√	-	√

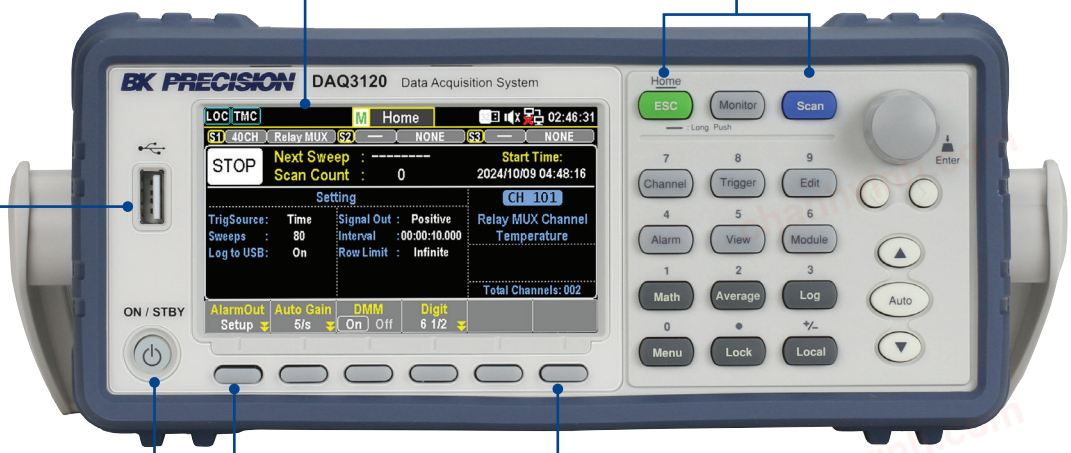
Benchtop Data Acquisition System
DAQ3120

Front panel

4.3” TFT color display
Full HD display with intuitive UI to facilitate setup and analysis

Operation keys
Provides quick access to enable measurements and start scans

USB host port
Save screenshots and data to a USB drive



Power button
Powers on the instrument or sets it to standby

Function keys
Six keys dedicated for selecting UI options

Rear panel

Micro GPIB (-GPIB model only)
Micro GPIB follows the same protocol and functionality as standard GPIB (IEEE488), but saves space with a smaller, more compact connector

3 Module Slots
Easily configure system with plug & play modules



Digital I/O interface
Provides 4 alarm outputs, 1 end of measurement (EOM) output, and 1 external trigger input

LAN interface
LAN port for remote control and monitoring

USB interface
USBTMC-compliant device port for remote control and monitoring

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Specifications

Note: All specifications apply to the unit after a temperature stabilization time of 1 hour over an ambient temperature range of 23 °C ± 5 °C.
Increment of one coefficient per one degree Celsius when the range is beyond TCAL ± 5 °C, Accuracy Specifications: ± (% of reading + % of range)

DC Characteristics (1)

DC Voltage

Input Protection	600 V on all ranges
Input Bias	< 30 pA (Typical, 25 °C)
Measure Method	Sigma-delta A/D Converter

Range (2)	Input Resistance	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient/°C
100.0000 mV	10 MΩ or Auto (> 10 GΩ)	0.0030 + 0.0050	0.0040 + 0.0060	0.0050 + 0.0060	0.0005 + 0.0005
1.000000 V		0.0020 + 0.0006	0.0035 + 0.0007	0.0048 + 0.0007	0.0005 + 0.0001
10.00000 V		0.0015 + 0.0004	0.0020 + 0.0005	0.0035 + 0.0005	0.0005 + 0.0001
100.0000 V	10 MΩ ± 1%	0.0020 + 0.0006	0.0035 + 0.0006	0.0050 + 0.0006	0.0005 + 0.0001
600.000 V		0.0025 + 0.0020	0.0040 + 0.0020	0.0050 + 0.0020	0.0005 + 0.0001

Resistance (3)

Input Protection	600 V on all ranges
Max lead Resistance	10% of range per lead for 100 Ω, 1 kΩ ranges. 1 k Ω per lead on all other ranges
Measure Method	Selectable 4-wire or 2-wire

Range (2)	Test Current	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient/°C
100.0000 Ω	1 mA	0.003 + 0.0030	0.008 + 0.004	0.010 + 0.004	0.0008 + 0.0005
1.000000 kΩ	1 mA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
10.00000 kΩ	100 µA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
100.0000 kΩ	10 µA	0.002 + 0.0005	0.008 + 0.001	0.010 + 0.001	0.0008 + 0.0001
1.000000 MΩ	5 µA	0.002 + 0.0010	0.008 + 0.001	0.010 + 0.001	0.0010 + 0.0002
10.00000 MΩ	500 nA	0.015 + 0.0010	0.020 + 0.001	0.040 + 0.001	0.0030 + 0.0004
100.0000 MΩ	500 nA || 10 MΩ	0.300 + 0.0100	0.800 + 0.010	0.800 + 0.001	0.1500 + 0.0004
1.000000 GΩ	500 nA || 10 MΩ	2.50 + 0.0500	3.50 + 0.0500	3.50 + 0.0500	1.0000 + 0.0040

DC Current

Input Protection	Internal, 250 V fuse for 2 A

Range (2)	Burden Voltage	Shunt	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient/°C
Characteristics – typical: DC current						
1.000000 µA	< 0.015 V	10 kΩ	0.025 + 0.050	0.050 + 0.050	0.050 + 0.050	0.002 + 0.003
10.00000 µA	< 0.15 V	10 kΩ	0.020 + 0.010	0.040 + 0.025	0.050 + 0.025	0.002 + 0.003
100.0000 µA	< 0.020 V	100 Ω	0.010 + 0.020	0.040 + 0.025	0.050 + 0.025	0.002 + 0.003
Specification: DC current						
1.000000 mA	< 0.20 V	100 Ω	0.007 + 0.006	0.030 + 0.006	0.050 + 0.006	0.002 + 0.001
10.00000 mA	< 0.15 V	10 Ω	0.007 + 0.020	0.030 + 0.020	0.050 + 0.020	0.002 + 0.001
100.0000 mA	< 0.7 V	1 Ω	0.010 + 0.004	0.030 + 0.005	0.050 + 0.005	0.002 + 0.002
2.000000 A	< 0.8 V	0.1 Ω	0.180 + 0.020	0.200 + 0.020	0.200 + 0.020	0.005 + 0.001

Diode Test (4)

Range (2)	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient/°C
5 V	0.002 + 0.030	0.008 + 0.030	0.01 + 0.03	0.001 + 0.002

Reading Rates

Measurement	Speed (readings per second)	Digits
DCV DCI 2W/4W Resistance	5 readings/s, 20 readings/s, 60 readings/s, 100 readings/s	6 ½
	400 readings/s, 1200 readings/s, 2400 readings/s	5 ½
	4800 readings/s, 7500 readings/s, 14400 readings/s, 19200 readings/s, 38400 readings/s	4 ½
Diode	400 readings/s	6 ½

(1) DC Specification: In addition to the warm-up time, measurement settings must be set at 5 /s speed and A-Zero
(2) The range of measurement exceeds the set range by 20% except in 600 V DC, 2 A DC, and diode
(3) These specifications apply to 4-wire Ω function or 2-wire Ω using math null for offset. Without math null, add an additional 2 Ω error. 100 MΩ and 1 GΩ ranges are only available in 2-wire
(4) This applies to the voltage measured from the input terminal. 1 mA test current is the typical value. A change of current source leads to variation in the buck of diode junction

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Specifications (cont.)

AC Characteristics [5]								
True RMS AC Voltage [6] [7] [8]								
Measurement Method	AC-coupled True RMS – measures the AC component of input with up to 400 Vdc of bias on any range							
Crest factor	Maximum 5:1 at full scale							
	24 Hour TCAL ± 1 °C		90 Day TCAL ± 5 °C		1 Year TCAL ± 5 °C		Temperature Coefficient/°C	
Range [6] / Frequency	100 mV	1 V to 400 V	100 mV	1 V to 400 V	100 mV	1 V to 400 V	100 mV	1 V to 400 V
3 Hz to 5 Hz	1.00 + 0.03	1.00 + 0.02	1.00 + 0.04	1.00 + 0.03	1.00 + 0.04	1.00 + 0.03	0.100 + 0.004	0.100 + 0.004
5 Hz to 10 Hz	0.35 + 0.03	0.35 + 0.02	0.35 + 0.04	0.35 + 0.03	0.35 + 0.04	0.35 + 0.03	0.035 + 0.004	0.035 + 0.004
10 Hz to 20 kHz	0.04 + 0.03	0.04 + 0.02	0.05 + 0.04	0.05 + 0.03	0.06 + 0.04	0.06 + 0.03	0.005 + 0.003	0.005 + 0.003
20 kHz to 50 kHz	0.10 + 0.05	0.10 + 0.04	0.11 + 0.05	0.11 + 0.05	0.12 + 0.05	0.12 + 0.05	0.011 + 0.005	0.011 + 0.005
50 kHz to 100 kHz	0.55 + 0.08	0.55 + 0.08	0.60 + 0.08	0.60 + 0.08	0.60 + 0.08	0.60 + 0.08	0.060 + 0.008	0.060 + 0.008
100 kHz to 300 kHz	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	4.00 + 0.50	0.200 + 0.020	0.200 + 0.020

True RMS AC Current [6] [8] [9]							
Input Protection	Internal, 250 V fuse for 2 A						
Range [6]	Burden Voltage	Shunt	Frequency	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient/°C
100 µA	< 0.020 V	100 Ω	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 mA	< 0.20 V	100 Ω	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 mA	< 0.15 V	10 Ω	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 mA	< 0.7 V	1 Ω	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 A	< 0.8 V	0.1 Ω	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

AC Bandwidth			
Input Impedance	1 MΩ ± 2%, in parallel with 100 pF		
Input Protection	400 Vrms on all ranges		
Speed	Bandwidth (ACV)	Bandwidth (ACI)	Digits
1/s (> 3 Hz)	3 Hz to 300 kHz	3 Hz to 10 kHz	6 ½
5/s (> 20 Hz)	20 Hz to 300 kHz	20 Hz to 10 kHz	5 ½
20/s (> 200 Hz)	200 Hz to 300 kHz	200 Hz to 10 kHz	4 ½

(5) AC Specification: Specified after 60 minutes of warm-up time on a sine wave
(6) The range of measurements exceeds the set range by 20% except in 400 V AC and 2 A AC
(7) Specifications are for sinewave input >5% of range. For 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
(8) Three speed settings provided for low-frequency performance: 1/s (3 Hz), 5/s (20 Hz), 20/s (200 Hz). No errors for frequencies greater than the filter settings
(9) 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

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Specifications (cont.)

Crest Factor Errors (non-sine wave)	
Crest Factor	**Error (% of reading)**
1 to 2	0.05%
2 to 3	0.15%
3 to 4	0.30%
4 to 5	0.40%

Low Frequency Errors (% of reading)			
Frequency	**1/s (> 3 Hz)**	**5/s (> 20 Hz)**	**20/s (> 200 Hz)**
10 Hz to 20 Hz	0	0.74	-
20 Hz to 40 Hz	0	0.22	-
40 Hz to 100 Hz	0	0.06	0.73
100 Hz to 200 Hz	0	0.01	0.22
200 Hz to 1 kHz	0	0	0.18
> 1 kHz	0	0	0

Frequency and Period Characteristics

Frequency / Period (10) (11)

Range	Frequency	24 Hour TCAL ± 1 °C	90 Day TCAL ± 5 °C	1 Year TCAL ± 5 °C	Temperature Coefficient/°C
100 mV to 400 V (12)	3 Hz to 5 Hz	0.100	0.100	0.100	0.100
	5 Hz to 10 Hz	0.050	0.050	0.050	0.035
	10 Hz to 40 Hz	0.030	0.030	0.030	0.015
	40 Hz to 1 MHz (13)	0.006	0.006	0.006	0.015

Function	Gate Time	Digits
Frequency, Period	1 s, 100 ms	6 ½
	10 ms	5 ½
	1 ms	4 ½

Temperature Characteristics (14)

RTD (Accuracy based on Pt100)

Range	Resolution	1 Year (23°C ± 5°C)	Temperature Coefficient 0° to 18°C and 28° to 55°C
-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

Thermocouples (Accuracy based on ITS-90)

Range	Range	Frequency	90 Day/1 Year (23°C ±5°C)	Temperature Coefficient 0° to 18°C and 28° to 55°C
E	-200 °C to 1000 °C	0.002 °C	0.2 °C	0.03 °C / °C
J	-210 °C to 1200 °C	0.002 °C	0.2 °C	0.03 °C / °C
T	-200 °C to 400 °C	0.002 °C	0.3 °C	0.04 °C / °C
K	-200 °C to 1372 °C	0.002 °C	0.3 °C	0.04 °C / °C
N	-200 °C to 1300 °C	0.003 °C	0.4 °C	0.05 °C / °C
R	-50 °C to 1768 °C	0.01 °C	1 °C	0.14 °C / °C
S	-50 °C to 1768 °C	0.01 °C	1 °C	0.14 °C / °C
B	350 °C to 1820 °C	0.01 °C	1 °C	0.14 °C / °C

Thermistor (2.2 kΩ, 5 kΩ, 10 kΩ or User Type)

Range	Resolution	90 Day/1 Year (23°C ±5°C)	Temperature Coefficient 0° to 18°C and 28° to 55°C
–80 ° to 150 °C	0.001 °C	0.1 °C	0.003 °C/ °C

(10) This specification will be available after 60 minutes of warm-up and sine wave input, unless stated otherwise. This specification applies to 1s gate time.
(11) This specification is 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.
(12) The amplitude range is from 10% to 120% and is lower than 400 VAC.
(13) The input ≥ 60 mV, for 300 k ~ 1 MHz, within 100 mV range.
(14) 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.

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Specifications (cont.)

Capacitance [15]				
Range	**24 Hour TCAL ± 1 °C**	**90 Day TCAL ± 5 °C**	**1 Year TCAL ± 5 °C**	**Temperature Coefficient/°C**
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	0.05 + 0.01

(15) Specifications are for film Capacitance inputs that are greater than 10% range.

General	
Display Resolution	4.3" color WQVGA (480x272) with LED backlight
Slot	3 module slots
Internal Memory	100 kSa (nonvolatile)
Interface	USB host port, USBTMC-compliant device port, LAN, 9-pin D-sub Digital I/O, and optional micro GPIB
AC Line Input	100 VAC to 240 VAC ± 10%, 50/60 Hz Max power consumption 50 VA
Environment	80% R.H. at 40 °C non-condensing Operating altitude up to 2,000 m
Weight	9.92 lbs (4.5 kg)
Warranty	3 Years
Safety and EMC	Refer to https://www.bkprecision.com/support/downloads/ce-declarations for the latest revision of the declaration of conformity
Standard Accessories	Power cord, certificate of calibration, USB cable, and screwdriver
Optional Accessories	Rackmount kit for DAQ3120 (RKDAQ)
Temperature	
Operation	32 °F to 141 °F (0 °C to 55 °C)
Storage	-40 °F to 158 °F (-40 °C to 70 °C)
Dimension (W x H x D)	
Rack (without rubber boot)	8.7" x 3.5" x 13.7" (220 x 88 x 348.6 mm)
Bench (with rubber boot)	10.5" x 4.2" x 14.1" (266.9 x 107 x 357.8 mm)

Ordering Information

① Start with the DAQ3120 or DAQ3120-GPIB base unit to control the modules' relay system.



DAQ3120



DAQ3120-GPIB



② Populate the base unit with any combination of up to 3 modules.
*DM304 does not connect to the built-in DMM

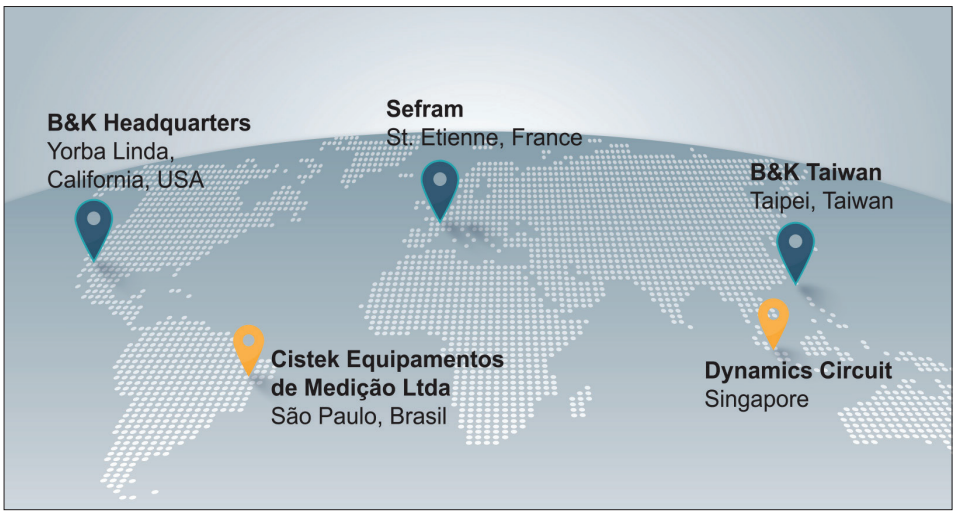
Model	Description
DM300	20-CH Solid-state Multiplexer
DM301	20-CH Multiplexer with 2 Current CH
DM303	40-CH Single-Ended Multiplexer
DM304*	4 x 8 Matrix
DM309	High Voltage and Current Multiplexer

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About B&K Precision

For more than 70 years, B&K Precision has provided reliable and value-priced test and measurement instruments worldwide.

Our headquarters in Yorba Linda, California houses our administrative and executive functions as well as sales and marketing, design, service, and repair. Our European customers are most familiar with B&K through our French subsidiary, Sefram. Engineers in Asia know us through our B+K Precision Taiwan operation. The independent service centers in Singapore and Brasil service customers in Singapore, Malaysia, Vietnam, Indonesia and South America, respectively.



B&K Precision group member Independent service center Service center location

Quality Management System

B&K Precision Corporation is an ISO9001 registered company employing traceable quality management practices for all processes including product development, service, and calibration.

ISO9001:2015

Certification body NSF-ISR
Certificate number 6Z241-IS8

NSF-ISR
Registered to ISO 9001

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