ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

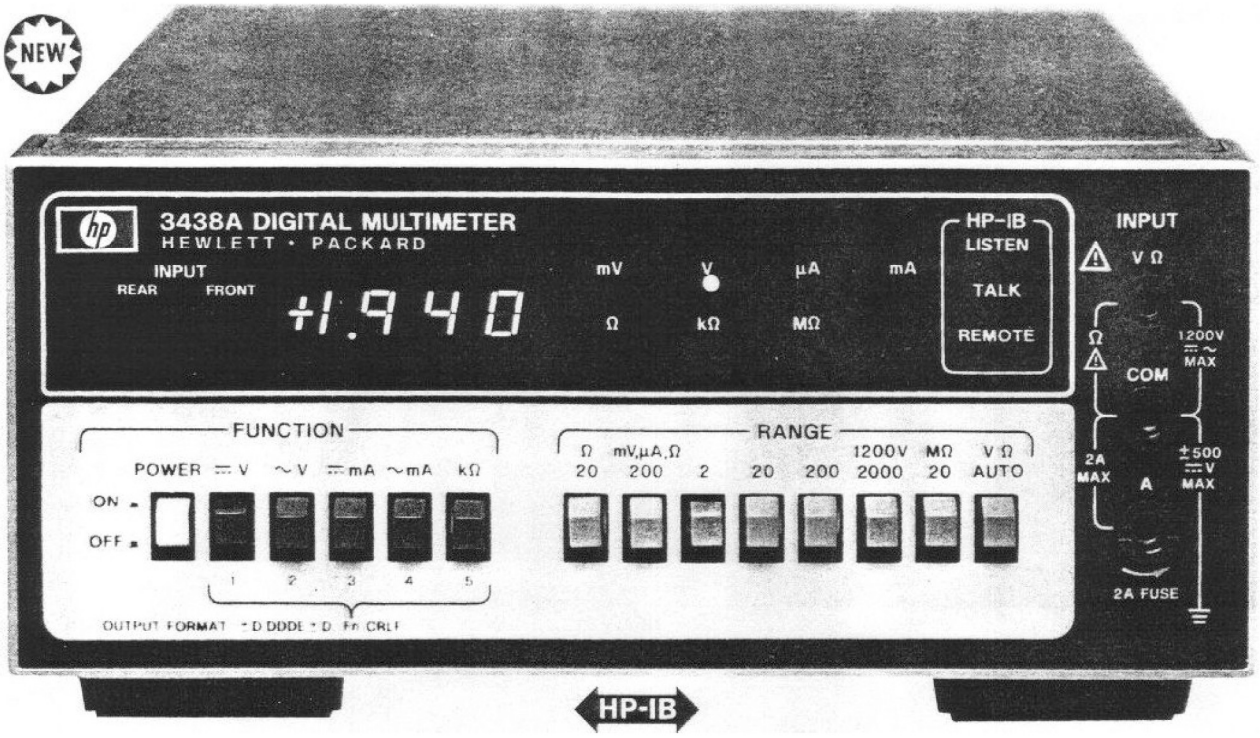
All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Keysight / Agilent 3438A* at our website: ***Click HERE***

DIGITAL VOLTMETER

HP-IB 5 Function DMM

Model 3438A



Description

The 3438A is an autoranging 3½ digit Multimeter with 5 functions of ACV, DCV, ACI, DCI, and Ω. It interfaces to the HP-IB providing both addressable and talk-only modes.

The addressable mode allows triggering either from the Calculating Controller (remote) or internally (local). Function and range are selected manually on the front panel with autoranging of volts and ohms.

Specifications

DC Voltmeter

Ranges:		Maximum display:	
	± 200 mV		± 199.9 mV
	± 2 V		± 1.999 V
	± 20 V		± 19.99 V
	± 200 V		± 199.9V
	± 1200 V		± 1199 V

Maximum input: 1200 V (DC + peak AC).
Ranging: Automatic or manual.
Sensitivity: 100μV on 200 mV range.
Polarity: Automatically sensed and displayed.
Accuracy (1 year, 15 to 30°C)

Range	Specifications
200 mV	± (0.1% of reading + 2 digits)
2 V to 1200 V	± (0.1% of reading + 1 digit)

Temperature coefficient: (0 to 15°C and 30 to 55°C) ± (.018% reading + 0.1 digit)/°C.
Input resistance: 10 meg Ω ± 1%.
Input Type: floating, 500 V maximum com. to ground.
Normal Mode Rejection: 40 dB at 50 Hz and 60 Hz ± .1 Hz.
Response time: <0.7 seconds to within 1 digit of final value on one range. Add 1 second for each range change.

Effective common mode rejection: (1 kΩ unbalance) > 120 dB at 50/60 Hz ± 0.1%.

DC Current

Ranges:		Maximum display:	
	± 200 μA		± 199.9 μA
	± 2 mA		± .999 mA
	± 20 mA		± 9.99 mA
	± 200 mA		± 99.9 mA
	± 2000 mA		± 999 mA

Maximum input: current: 2 amp (fuse protected); voltage: 250 V
Ranging: manual only.
Sensitivity: 100 nA on 200 μA range.
Polarity: automatically sensed and displayed.
Accuracy (1 year, 15 to 30°C)

Range	Specifications
200 μA to 200 mA	± (0.3% of reading + 2 digits)
2000 mA	± (0.6% of reading + 2 digits)

Temperature coefficient: (0 to 15°C and 30 to 55°C) ± (.028% of reading + 0.1 digits)/°C.
Voltage burden:

Range	Maximum Burden at Full Scale
200 μA to 20 mA	< 220 mV
200 mA	< 240 mV
2000 mA	<400 mV

Response time: 0.7 seconds on any range to within 1 digit of final value.

AC Voltmeter

AC Converter (average responding RMS calibrated)

Ranges:		Maximum Display:	
	200 mV		199.9 mV
	2 V		1.999 V
	20 V		19.99 V
	200 V		199.9 V
	1200 V		1199 V

Maximum input: 1700 V (DC + Peak AC), 10^7 Volt-Hz max.
Ranging: Automatic or manual.
Sensitivity: 100 μV on 200 mV range.
Accuracy (with display of ≥20 digits) 1 year, 15 to 30°C

Range	Specifications
30 Hz-50 Hz	±(1.5% of reading ±3 digits)
50 Hz-20 kHz	±(0.3% of reading ±3 digits)
20 kHz-100 kHz	±(1.5% of reading ±10 digits)

Temperature coefficient: (0 to 15°C and 30 to 55°C) ±(0.04% of reading +0.2 digit)/°C.
Input impedance: resistance: 5 meg Ω; shunt capacitance: <50 pf.
Response time: 1.6 seconds to within 3 digits of final value on one range. Add 1.2 seconds for each range change.
Input type: floating, 500 V maximum com. to ground.

AC Current

Ranges:	200 μA	**Maximum display:**	199.9 μA
	2mA		1.999 mA
	20 mA		19.99 mA
	200 mA		199.9 mA
	2000 mA		1999 mA

Maximum input: current: 2 amp (fuse protected) voltage: 250 V.
Ranging: Manual only.
Sensitivity: 100 nA on 200 μA range.
Accuracy (With display of ≥20 digits) 1 year, 15 to 30°C

Current Range	30 Hz	50 Hz	10 kHz
2000 mA	±(2% of reading +4 digits)	±(1.2% of reading +4 digits)	
200 mA			
200 μA	±(1.7% of reading +4 digits)	±(0.9% of reading +4 digits)	

Frequency of Input Signal

Temperature coefficient: (0 to 15°C and 30 to 55°C) ±(0.05% of reading +0.2 digits)/°C
Voltage burden

Range	Maximum Burden at Full Scale
200 μA to 20 mA	<220 mV RMS
200 mA range	<240 mV RMS
2000 mA range	<400 mV RMS

Response time: 1.6 seconds on any range to within 3 digits of final value.

Input type: floating, 500 V maximum com. to ground.

Ohmmeter

Ranges:	20Ω	**Maximum display**	19.99Ω
	200Ω		199.9Ω
	2kΩ		1.999 kΩ
	20 kΩ		19.99 kΩ
	200 kΩ		199.9 kΩ
	2000 kΩ		1999 kΩ
	20 MΩ		19.99 MΩ

Input protection: 250 V RMS.
Ranging: automatic or manual.
Sensitivity: 10 milliohm on 20Ω range.
Accuracy (1 year, 15 to 30°C)

Range	Specifications
20Ω	±(0.5% of reading +10 digits)
200Ω to 2 MΩ	±(0.2% of reading +2 digits)
20 MΩ	±(0.8% of reading +2 digits)

Temperature coefficient (0 to 15°C and 30 to 55°C)

Range	Specifications
20Ω-2 MΩ	±(0.04% of reading + 0.2 digits)/°C
20 MΩ	±(.18% of reading + 0.2 digits)/°C

Configuration: 2 wire.
Open circuit voltage: <5 V.
Current through unknown
Range: 20Ω, 200Ω, 2kΩ, 20 kΩ, 200 kΩ, 2 MΩ, 20 MΩ.
Current: 5 mA, 5 mA, 500 μA, 50 μA, 5 μA, 500 nA, 50 nA.
Response time: 0.8 seconds to within 1 digit. Add 0.8 seconds for each range change.

HP-IB

Data output format:

±X.XXX	E±X,	Fn	CR LF (13 byte, fixed)

DISPLAY EXPONENT FUNCTION

Function Code: DCV, 1; ACV, 2; DCI, 3; ACI, 4; Ω, 5
Overload Indication: ±1.XXX E + 9
Talk Modes (Selected by internal switch)
Addressed to talk
Local: continuously sampling input; outputs on Bus when addressed to talk.
Remote: samples input only on command from controller.
Talk only (used without controller)
Input: switch selectable, front or rear.
Reading rate: is function of input level and ranging (2.5 to 4.7/sec. if in proper range).
With Range change
ACV, ACI: add 1.2 seconds for each range change. After arrival on proper range, the first six readings are always discarded. The seventh reading is output on Bus. Allow 1.6 seconds additional for first reading on Bus.
DCV, DCI, kΩ: Add 1 second for each range change. After arrival on proper range, the first reading is always discarded. Allow 310 ms additional for first reading on Bus.

General

Calibration: data sheet specifications guaranteed for 1 year.
Display: 7 segment red 0.3 inch high LED's. Function and range annunciation.
Reading rate: 2.4–4.7/sec. depending on input level.
A-D Conversion: dual slope.
Integration time: 100 msec.
Ranging: automatic or manual on ACV, DCV, and ohms. Manual only on AC & DC current.
Storage temperature: −40 to +75°C.
Operating temperature: (0 to 55)°C.
Humidity: 95% RH at +40°C.
Power: 48-440 Hz, 12 watts; 86-106 V Opt 100; 104-127 V Opt 115; 190-233 V Opt 210; 208-250 V Opt 230.
Size: 85.7 mm H x 209.6 mm W x 292.2 mm D (3⅜" x 8¼" x 11½").
Weight: 2.8 kg (6 lb 5 oz).

Ordering information

11000A Test leads, dual banana both ends
11002A Test leads, dual banana to dual alligator
11003A Test leads, dual banana to probe and alligator
11096B RF Probe 10 kHz to 700 MHz
34110A Soft vinyl carrying/operating case
34111A High-voltage Probe 40 kV DC
34112A Touch-Hold Probe
11067A Test lead kit
5061-0072 ½ module rackmount kit
10631A 1 m (39.37")
10631B 2 m (39.37")
10631C 4 m (39.37")

3438A
Opt 100, 115, 210, 230

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP