

# APPA 300 Series

## The Most User-Friendly High Performance Multimeter



東方科技公司 ORIENTAL TECHNOLOGY COMPANY



O/B ORIENTAL TECH DEVELOPMENT LTD.

Unit 2203, Technology Plaza, 29-35 Sha Tsui  
Road, Tsuen Wan, N.T., Hong Kong.

Tel: 852-24023200

Fax: 852-24133100

<http://www.otdl.com>

[info@otdl.com](mailto:info@otdl.com)

# Throw Away the Manual .....

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So Easy, So Simple Straight Forward .....

For basic application, simply to operate these keys .....

"LIGHT"	To turn ON/OFF the backlight (Also can be set at desirable Auto-off minutes).
"BAR"	To select regular bargraph, zoom bargraph, center zero, zoom center zero or no bargraph.
"DIGIT"	To choose 40000 count or 4000 count digital display.
"RANGE"	To manual ranging for fast measurements,
"BLUE" Key	To change to "BLUE" function on rotary switch.

Fully autoranging on 12 functions: DCV, ACV, AC+DC V  
DCA, ACA, OHM,  
Low Voltage OHM  
DIODE Test  
CONTINUITY Test  
CAPACITANCE  
FREQUENCY COUNTER  
TEMPERATURE (APPA 303, 305)

On-Screen-Menu Selection, No Confuse, No mistake .....

For multifunction application, use the Screen Menu to Select function by matrix operation of F1, F2, F3, F4 and O .....

"STORE", "RECALL"	Store and Recall test data up to 7 memories on the second display.
"RESET"	Reset meter at any time.
"AUTO HOLD"	Automatically captures the measurement and updates with each new measurement.
"PEAK HOLD"	Fast 0.1 millisecond peak hold (APPA 303, 305).
"MAX", "MIN", "MAX-MIN"	On the second display with time stamp.
"HIGH", "LOW"	To do as a Comparator with the second display.
" ", "%"	Relative function and Percentage function.
"REF"	Reference function, useful for offset data.
"SETUP" (+ - < >)	Allow you to setup buzzer ON/OFF, Average ON/OFF. Auto Power Off minutes, Back Light minutes, Hertz display ON/OFF, Line frequency, dBm impedance and Reset function.
"dBm", "dB"	Dual display of frequency and dBm or dB reference.
"SEND"	To send measuring data to computer.

The unique Screen Menu plus full annunciators will help you concentrate on pick signal and look at the display, there's no need to look at the input connection or switch position.

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# Engineered to Work Anytime, Anywhere

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## ALL-WEATHER HOUSING

Designed for harsh environments with water tight gaskets at the seams, rotary switch, input terminals and battery cover to keep out dust, dirt and splashing. They can also take shocks and drops, work anywhere from indoor to outdoor.

## DAY & NIGHT

Every APPA 300 Series meter has a backlit display that turns ON/OFF at the touch of a button, also automatically goes off at selectable minutes.

## EXTRA PROTECTION

Every APPA 300's meter is supplied with a protective holster that includes a built-in tilt stand, a nail hook, and convenient test lead storage. This holster provides an extra degree of protection and convenience for your meter.

## SAFETY & DURABILITY

High energy fuses, spark gaps, PTCs, and fusible resistors protect APPA 300's meter, and its user, from overloads. The unique rotary switch, constructed with durable engineering plastic, beryllium copper contacts, and gold-plated circuit boards, will provide years of use.

## NO-OPTION FULL ACCESSORIES

Ergonomically designed test leads with comfort-grip, safety-shrouded, full-sleeve right-angle plug and hard alloy trips for long life. Slip-on insulated alligator clips are standard. Also supplied with temperature adaptor and bead sensor (Model 303 and 305).

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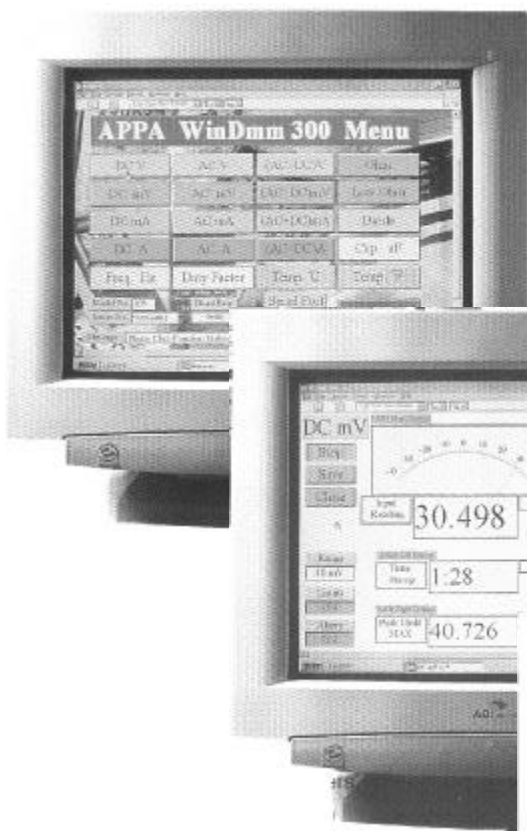
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# Safe & Easy Connection to PCs

The APPA 300 Series built-in RS 232 Interface gives you a safe and easy gateway to your PCs. The optical-electronic RS 232 interface cable/adaptor and APPA WinDMM 300 software are included with model 305, or optional purchase with model 301 and 303.



## Auto Calibration

Every APPA 300's meter can be easily Auto-Calibrated through external calibrator and PCs by connecting test leads and RS 232 cable to the meter, no need to open its housing.

## Virtual Instrumentation .....

The LabVIEW-based software empowers users to build their own instrumentation systems with standard PCs and APPA 300 Series meter that called Virtual Instrumentation. You can mix and match your choice of data acquisition to create virtual instrumentation systems that exactly meet your needs.

## Data Acquisition and Analysis

Download information from the meter to your PC when you want to document measurements for reports, or to make data analysis through powerful, comprehensive APPA WinDMM 300 software for statistics and evaluations.

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# The Best Value for Your Money



APPA 300 Series Multimeter: Summary Specifications and Feature Sets

MEASUREMENT	BASIC ACCURACY		
RANGE	APPA 301	APPA 303	APPA 305
Vdc 0V ~ 1000V	0.20%	0.10%	0.06%
Vac 0V ~ 750V (40Hz ~ 100KHz)	1.00%	0.70%	0.50%
Adc 40 $\mu$ A ~ 10A	0.50%	0.30%	0.20%
Aac 40 $\mu$ A ~ 10A	1.20%	1.00%	0.80%
Ohms 0 $\Omega$ ~ 40M $\Omega$	0.50%	0.40%	0.30%
Capacitance 4nF ~ 10mF	1.90%	1.40%	0.90%
Frequency 40Hz ~ 4MHz	0.01%	0.01%	0.01%
Temperature (K Type) -200°C ~ 1300°C	N/A	1°C	1°C
FEATURE			
Analog Bargraph Display, 80 Segments	.	.	.
Zoom Analog Bargraph	.	.	.
Centre Zero Analog Bargraph	.	.	.
Auto Calibration	.	.	.
Auto HOLD	.	.	.
Auto Fuse Detector	.	.	.
Beep Guard	.	.	.
Continuity Check / Beeper	.	.	.
Dbm/db Readings with Selectable Ref. Impedance	.	.	.
Delta mode with %	.	.	.
Diode test	.	.	.
Hazard Warning	.	.	.
HI/LO Limits	.	.	.
Low Voltage Ohms	.	.	.
Memory Store and Recall	.	.	.
MAX / MIN / MAX-MIN	.	.	.
True RMS (AC, AC + DC)	.	.	.
VAC / Hz / Period Triple Display	.	.	.
Water / Dust Resistant	.	.	.
Zero Reference	.	.	.
600V High Energy Fuse	.	.	.
Holster and Stand	.	.	.
LCD Backlight	.	.	.
Peak and circuit (0.1 millisecond)	N/A	.	.
RS232 Phototronic Serial Port	.	.	.
RS232 Cable	.	.	.
APPA WinDMM 300 Software	.	.	.
Safety	Option Option IEC, UL, CSA	Option Option IEC, UL, CSA	IEC, UL, CSA

**SPECIFICATIONS: (All at 23°C ± 15°C, <80% R.H.)**

Multiply accuracy digits by 10 in 40000 count mode.

**VOLTAGE:**

DCV	301	303	305
40mV	± (0.20% + 8d)	± (0.10% + 8d)	± (0.06% + 8d)
400mV	± (0.20% + 2d)	± (0.10% + 2d)	± (0.06% + 2d)
4V, 40V, 400V, 1000V	± (0.20% + 2d)	± (0.10% + 2d)	± (0.06% + 2d)

ACV	301	303	305
400mV, 4V, 40V, 400V, 750V	± (1.00% + 5d)	± (0.70% + 5d)	± (0.50% + 5d)
Bandwidth	40Hz ~ 10KHz	40Hz ~ 50KHz	40Hz ~ 100KHz

AC + DC V	301	303	305
400mV, 4V, 40V, 400V, 750V	± (1.00% + 5d)	± (0.70% + 5d)	± (0.50% + 5d)
Bandwidth	40Hz ~ 10KHz	40Hz ~ 50KHz	40Hz ~ 100KHz

Resolution: 1µV in the 40mV range.

Input Impedance: 10MΩ, &lt;100pF.

Overload Protection: 1000V dc, 750V rms.

AC Conversion Type: AC Coupled True RMS responding.

**CURRENT:**

DCA	301	303	305
40mA, 400mA	± (0.50% + 4d)	± (0.30% + 4d)	± (0.20% + 4d)
4A, 10A	± (0.50% + 4d)	± (0.30% + 4d)	± (0.20% + 4d)

ACA	301	303	305
40mA, 400mA, 4A, 10A	± (1.20% + 8d)	± (1.00% + 8d)	± (0.80% + 8d)
Bandwidth	40Hz ~ 400Hz	40Hz ~ 400Hz	40Hz ~ 400Hz

Range: 40mA, 400mA, 4A, 10A.

Resolution: 1µA in the 40mA range.

Burden Voltage: 800mV max. for mA input, 1V max. for A input.

AC Conversion Type: AC Coupled True RMS responding.

Input Protection: Equipped with High Energy Fuse.

1A, 600V, IR 10KV fuse (Bussmann BBS-1 or equivalent) for mA input.

15A, 600V, IR 100KV fuse (Bussmann KTK 15 or equivalent) for A input.

**RESISTANCE:**

OHM	301	303	305
400Ω, 4KΩ, 40KΩ, 400KΩ, 4MΩ, 40MΩ	± (0.50% + 2d)	± (0.40% + 2d)	± (0.30% + 2d)

LV OHM	301	303	305
4KΩ, 40KΩ, 400KΩ, 4MΩ, 40MΩ	± (1.00% + 2d)	± (0.80% + 2d)	± (0.60% + 2d)

Resolution: 0.01Ω in the 400Ω range.

Open Circuit Voltage: 3V.

Open Circuit Low Voltage: 0.6V.

Input Protection: 600V rms.

**CONTINUITY TEST:**

Continuity Threshold: Approx. 50Ω

Continuity Indicator: 2KHz Tone Buzzer.

Input Protection: 600V rms.

**DIODE TEST:**

Test Current: 1.1mA (Typical).

Open Circuit Voltage: 3V DC (max.)

Input Protection: 600V rms.

**CAPACITANCE:**

DCV	301	303	305
4nF, 40nF, 400nF, 4µF, 40µF, 400µF, 4mF, 10mF	± (1.90% + 2d)	± (1.40% + 2d)	± (0.09% + 2d)

Range: 4nF, 40nF, 400nF, 4µF, 40µF, 400µF, 10mF

Resolution: 1pF in the 4nF range.

Input Protection: 600V rms.

**FREQUENCY COUNTER:**

Range: 400Hz, 4KHz, 40KHz, 400KHz, 4MHz

Resolution: 0.01Hz in the 400Hz range.

Accuracy: ± (0.01% + 1d)

Sensitivity: 0.5V p-p, for 40Hz ~ 1MHz, 1V p-p, for 1MHz ~ 4MHz

Input Protection: 600V rms.

**TEMPERATURE:**

Range: -200°C ~ 1300°C

Resolution: 0.1°C

Accuracy: 1°C + 1d

Input Protection: 600V rms.

**GENERAL:****Display:** 4½digit (4000 cunt) and 3½digit (4000 count), 80 segment analog bar graph and full annunciators, automatic polarity indication.**Measuring Rate:** Digit 2 times per second for 4½digit, Digit 4 times per second for 3½digit, Analog bargraph 20 times per second.**Overrange Indication:** OL is displayed.**Auto Power Off:** User selectable (default: 30 minutes).**Operating Temperature:** 0°C ~ 50°C**Storage Temperature:** -20°C ~ 60°C**Temperature Coefficient:** 0.1 x (Spec. Accuracy) per °C, <18°C or >28°C**Relative Humidity:** 0% to 80%**Shock & Vibration:** per MIL-T-28800E TYPE II Class 5.**Dust/Water Protection IP Rating:** IP 64.**Safety:** Designed to IEC 1010-1, UL 3111 and CSA specifications.**Maximum Voltage to Earth:** 1000V DC or AC peak from any terminal.**Power Requirement:** IEC 6LF22, 6AM6 or NEDA 1604A 9V x 1.**Battery Life:** 100 hours typical (alkaline).**Size:** 90mm (W) x 200mm (L) x 42mm (D) (3.54in x 7.87in x 1.65in).

With holster 100mm x 212mm x 55mm (3.94in x 8.35in x 2.17in).

**Weight:** Approx. 14.8oz (420g). With holster 22.9oz (650g).**Included with Instrument:** Safety-designed test leads, test clips, a 9V alkaline battery (installed), instruction manual, a protective holster with stand, a temperature adaptor (for APPA 303, 305), a K type bead sensor (for APPA 303, 305), a RS232 cable and APPA WinDMM 300 software (for APPA 305).**Optional Accessories:****APPA 32 AC/DC Current Probe**

Non-intrusive transducing from 0.1A to 600A with 2% basic accuracy.

Wide jaw fits over almost any size conductor.

Coiled cable with safety banana plug extend up to 1.5 meters, 50 hours typical battery life, 9V battery installed.

**AC-300 Carrying Case**

Tough, double wall woven fabric, two way zipper carrying case for APPA 300 series multimeter. Inside pockets are designed to carry test lead, temp. adaptor, bead probe, RS232 cable and manual.