FEATURES

- 100000/10000 Count extra-large digital display
- 43 segments analogue bar graph
- Auto Backlit
- Auto AC, DC and AC+DC on Voltage
- Current mode with Frequency Indication
- Auto selection on Ohm, Diode or Continuity
- On-Screen-Menu Selection
- Navigator Key Drive
- High-Frequency Rejection (HFR)
- 0.015% DCV accuracy
- AC+DC True RMS indication
- 0.5 ms Peak Hold
- Auto Hold
- Store/Recall memories
- dBm/dB measurement
- 20000 records data logging capacity
- Optical USB interface

RS PRO Digital Multimeters- IDM505 Handheld Digital Multimeter

RS Stock No.: 124-1960

RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

RS PRO IDM505 Handheld Digital Multimeter

RS PRO IDM505 digital multimeter is designed for harsh environments. With a watertight gasket at the seams rotary switch, input terminal and battery cover to keep out dust, dirt and splashing. These handheld devices can measure capacitance, voltage, electrical current, frequency, temperature, duty cycle and resistance with diode and continuity check. This meter has an LCD display where the measurement readouts can be viewed.

General Specifications

Model Number (p)	**IDM505**
Multimeter Type	**Handheld**
Functions Measured	**AC Current, AC Voltage, Capacitance, Continuity, DC Current, DC Voltage, Diode, Duty Cycle, Frequency, Resistance, Temperature**
True RMS	**YES**
Display Type	**LCD**
Bar graph	**43 segments**
Operating Temperature (Min to Max)	**0°C to +50°C**
Storage Temperature (Min to Max)	**-20°C to 60°C, 0% RH to 80% RH (batteries not fitted)**
Diode Test	**Yes**
Continuity Test	**Yes**
Auto power off	**Yes, Approx. 10 minutes after last operation**
Accuracy	**0.015% DCV accuracy**
Memory Capacity	**20000 records data logging capacity**
IO Interface	**Optical USB interface with Software included**

Measurement

Type	Absolute Maximum Measurement	Resolution	Best Accuracy
DC Current	**10A dc**	**0.1µA**	**±0.1 % + 4 Digit**
AC Current	**10A ac**	**0.1µA**	**±0.7 % + 80 Digit**
Resistance	**40MΩ**	**10mΩ**	**±0.025 % + 30 Digit**
DC Voltage	**1000V dc**	**0.001mV**	**±0.015 % + 20 Digit**
AC Voltage	**1000V ac**	**0.001mV**	**±0.4 % + 50 Digit**
Capacitance	**40mF**	**0.01nF**	**±0.8 % + 2 Digit**
Temperature	**+1200°C**	**0.1°C**	**±1 % + 1 °C**
Frequency	**4MHz**		

Electrical Specifications

Battery Type	1.5 V AA Alkaline (NEDA 15A)
Battery life	100 h
Safety Category Voltage	600 V, 1000 V

Mechanical Specifications

Dimensions	95 x 51.2 x 200mm
Width	51.2mm
Length	95mm
Height	200mm
Weight	620 (with Holster)g

Protection Category

Safety Category Level	CAT III, CAT IV

Approvals

Compliance/Certifications	IEC 61010-1: CAT.IV 600V, CAT.III 1000V.
Declarations	RoHS Certificate of Compliance

Similar Products

Stock No.	Brand	Product Name	Multimeter Type	Functions Measured	Digit Resolution
144-5348	RS PRO	HS608 MeterScope Handheld Digital Multimeter With RSCAL calibration	Handheld	AC Current, AC Voltage, Capacitance, Conductance, DC Current, DC Voltage, Diode, Frequency, Resistance, RMS, Temperature	

124-0228		IDM8342 Bench Digital Multimeter	Bench	AC Current, AC Voltage, Capacitance, Continuity, DC Current, DC Voltage, Diode Test, Frequency, Resistance, Temperature	

Physical Dimensions / Connection Diagram / Accessories Included

Specifications:

- Accuracy is ± (% reading + number of digits)
- Ambient temperature: 23°C ± 5°C (< 80% RH)
- For the best measurements, with REL Δ function to compensate for offsets.

Voltage:

Function	Range	Accuracy
AC	100.000mV 1000.00mV	Sine Wave: ± (0.7% + 50d) for 40Hz to 65Hz[1] ± (1.5% + 50d) for 66Hz to 1kHz[1] ± (3.0% + 50d) for 1kHz to 3kHz[2]
	10.0000V 100.000V	Sine Wave: ± (1.0% + 50d) for 40Hz to 45Hz[1] ± (0.4% + 50d) for 46Hz to 65Hz[1] ± (1.0% + 50d) for 66Hz to 1kHz[1] ± (2.0% + 50d) for 1kHz to 10kHz[1] ± (3.0% + 50d) for 10kHz to 20kHz[2] ± (5.0% + 50d) for 20kHz to 50kHz[3] ± (10% + 50d) for 50kHz to 100kHz[3] [4]
	1000.0V	Sine Wave: ± (1.0% + 50d) for 40Hz to 45Hz[1] ± (0.4% + 50d) for 46Hz to 65Hz[1] ± (1.0% + 50d) for 66Hz to 1kHz[1]
DC	100.000mV	± (0.025% + 40d)
	1000.00mV	± (0.020% + 20d)
	10.0000V 100.000V 1000.00V	± (0.015% + 20d)
[1] Below 5% of AC range, add 70d to accuracy. [2] Below 5% of AC range, add 150d to accuracy. [3] Below 5% of AC range, add 350d to accuracy. [4] At 100.000V of AC range, the accuracy is ± (15% + 50d).		

Input Protection: 1000VDC or 1000VAC rms

Input Impedance: 10MΩ, < 100pF

Bandwidth: 40Hz to 100 kHz

Minimum Resolution: 1µV

CMRR / NMRR (Common / Normal Mode Rejection Ratio):

VAC: CMRR > 60dB at DC, 50Hz / 60Hz

VDC: CMRR > 100dB at DC, 50Hz / 60Hz

NMRR > 50dB at DC, 50Hz / 60Hz

AC Conversion Type:

AC conversions are ac-coupled, true rms responding, calibrated to the sine wave input.

For non-sine wave add the following Crest Factor corrections:

For Crest Factor of 1.4 to 2.0, add 1.0% to AC accuracy.

For Crest Factor of 2.0 to 2.5, add 2.5% to AC accuracy.

For Crest Factor of 2.5 to 3.0, add 4.0% to AC accuracy.

Current:

Function	Range	Accuracy
AC	10.0000mA 100.000mA 10.0000A	Sine Wave: ± (0.7% + 80d) for 40Hz to 65Hz[1] ± (2.0% + 80d) for 66Hz to 1kHz[1]
DC	10.0000mA 100.000mA	± (0.1% + 40d)
	10.0000A	± (0.1% + 80d)
[1] Below 5% of AC range, add 70d to accuracy.		

Input Protection: Equipped with High Energy Fuse

mA: 440mA, 1000V IR 10kA Fuse (Bussmann DMM-B-44/100)

A: 11A, 1000V IR 20kA Fuse (Bussmann DMM-B-11A)

Input Impedance: 10mΩ at A input, 10Ω at mA input

Bandwidth: 40Hz to 1 kHz

Minimum Resolution: 0.1μA in the 10mA range

Maximum Measuring Time: 3 minutes at A input, 10 minutes at mA input

Rest time is 20 minutes minimum

AC Additional Specifications: The AC additional specifications are same as voltage

AC+DC:

Function	Range	Accuracy
On ACV / ACA	Same as ACV / ACA	AC accuracy + DC accuracy + 1.0%

HFR (Low Pass Filter)

Function	Range	Accuracy
On ACV	Same as ACV	AC accuracy + 1.0% for 40Hz to 400Hz

The Cut-Off Frequency of HFR: 800Hz (-3dB point)

Attenuation Characteristic of HFR: Approx. -24dB

Frequency Counter:

Function	Range	Sensitivity	Accuracy
On ACV / ACA	100.0Hz 1.000kHz 10.00kHz	20% AC Range	± (0.1% + 1d)
On AC 4V AC 40V	100.0kHz	40% AC Range	

Min Frequency: 10Hz

Minimum Resolution: 10Hz

Peak Hold:

Function	Range	Accuracy
On ACV / ACA	50,000 counts	± (3.0% + 100d)

Resistance:

Range	Resolution	Accuracy
1000.00Ω	10mΩ	± (0.05% + 30d)
10.0000kΩ	100mΩ	± (0.025% + 30d)
100.000kΩ	1Ω	
1000.00kΩ	10Ω	± (0.3% + 30d)
10.0000MΩ	100Ω	± (1.0% + 30d) [1]
40.00MΩ	10kΩ	± (1.5% + 30d) [1]
[1] There is a little rolling less than < 100d.		

Input Protection: 1000VDC or 1000VAC rms

Maximum Open Circuit Voltage: Approx. 3.5V

Continuity Check:

Range	Resolution	Accuracy
1000.0Ω	100mΩ	± (0.05% + 3d)

Input Protection: 1000VDC or 1000VAC rms

Maximum Open Circuit Voltage: Approx. 2.5V

Maximum Short Test Current: Approx. 0.1mA

Continuity Threshold: 50Ω

Continuity Indicator: 2 kHz Tone Buzzer

Diode Test:

Range	Resolution	Accuracy
2.000V	1mV	± (1.5% + 2d)

Input Protection: 1000VDC or 1000VAC rms

Maximum Open Circuit Voltage: Approx. ±2.5V

Maximum Short Test Current: Approx. ±0.5mA

Capacitance:

Range	Resolution	Accuracy	Measuring Time
4.000nF	1pF	Unspecified	0.7sec
40.00nF	10pF	± (1.2% + 20d)	
400.0nF	100pF	± (0.8% + 2d)	
4.000uF	1nF		
40.00uF	10nF		
400.0uF	100nF		
4.000mF	1uF	± (1.2% + 20d)	3.75sec
40.00mF	10uF	± (1.2% + 40d)	7.5sec

Input Protection: 1000VDC or 1000VAC rms

Frequency Counter:

Range	Resolution	Sensitivity	Accuracy
40.000Hz	0.001Hz	2VP-P	± 50d
400.00Hz	0.01Hz	2VP-P	± 10d
4.0000kHz	0.1Hz	2VP-P	
40.000kHz	1Hz	4VP-P	
100.00kHz	10Hz	8VP-P	

Input Protection: 1000VDC or 1000VAC rms

Minimum Frequency: 5Hz

Maximum Test Voltage: 400V

Temperature:

Range	Resolution	Accuracy
-200.0°C to 10.0°C	0.1°C	± (1.0% + 20d)
10.1°C to 1200.0°C	0.1°C	± (1.0% + 10d)
-328.0°F to 50.0°F	0.1°F	± (1.0% + 40d)
50.1°F to 2192.0°F	0.1°F	± (1.0% + 20d)

Input Protection: 1000VDC or 1000VAC rms

General:

Sampling Rate:	3 times/sec
Overload Indication:	"OL" or "-OL"
Low Battery Indication:	
Auto Power Off:	Approx. 30 minutes after last operation
Operating Temperature:	0 °C ~ 30 °C (≤85% RH) 30 °C ~ 40 °C (≤75% RH) 40 °C ~ 50 °C (≤45%RH)
Storage Temperature:	-20°C to 60°C, 0% RH to 80% RH (batteries not fitted)
Temperature Coefficient:	0.15 x (Specified accuracy) / °C, < 18°C, > 28°C.
Safety:	IEC 61010-1: CAT.IV 600V, CAT.III 1000V.
Power Requirement:	4 x 1.5V IEC LR6 or AA size
Battery Life:	100 hours
Size:	95mm(W) x 207mm(L) x 52mm(D)
Weight:	Approx. 630g (with battery)
Accessories:	Battery (installed), Test Leads, User Manual, USB Cable, Software CD