

Technická data a přesnosti digitálního multimetru ESCORT EDM-83BS

Výtah z originální příručky k přístroji

Section III

General Specifications

Display: 3¾ digits liquid crystal display (LCD) with maximum reading of 3999
 Polarity: Automatic, (-) negative polarity indication
 Functions: DCV, ACV, DCA, ACA, Ω, Inductance, Capacitance, TTL logic level, Diode check, Frequency, Audible continuity test, dBm
 Features: True RMS reading for ACV and ACA; Audible readout; Autoranging for frequency test; High voltage warning detection; Function annunciators; Data hold; max/min/avg memory record; Relative mode and Auto power off
 Low battery indicator: The " " appears when the battery voltage drops below 7V (approx.)
 Measurement rate: 2.5 measurements per second, nominal (with exception of Frequency, TTL Logic level, Audible Continuity and Capacitance measurement)
 Operating temperature: 0°C to 50°C, 0-80% R.H.
 Storage temperature: -20°C to 50°C, 0-80% R.H. with battery removed
 Temperature coefficient: 0.15 x [specified accuracy] /°C [0°C to 18°C or 28°C to 50°C] (with exception of 4000MΩ Range)
 Power supply: single standard NEDA1604, JIS006P, IEC6F22 carbon-zinc or alkaline type 9V battery
 Dimensions: 37mm[H] X 90mm[W] X 192mm[L]
 Weight: 420 grams with battery included
 Accessories: Test leads (pair), spare fuse (630mA/250V, fast blow), battery and operator's manual

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Electrical Specifications

Accuracies are ±(%rdg+no. of digits) at 23°C±5°C; Less than 80% R.H.

DC Voltage

Range	Resolution	Accuracy	Overload Protection
400mV	100µV	±(0.5%rdg+1dgt)	500V rms
4V	1mV		1200VDC, 900VAC rms
40V	10mV		
400V	100mV		
1000V	1V	±(0.5%rdg+2dgt)	

■ Input impedance: 10MΩ approx.

AC Voltage (True RMS, AC coupled 10% to 100% of full scale)

Range	Resolution	Frequency	Accuracy	Overload Protection
400mV	100µV	50Hz-500Hz	±(1.2%rdg+5dgt)	500V rms
		500Hz-1kHz	±(1.6%rdg+5dgt)	
4V	1mV	50Hz-500Hz	±(1.2%rdg+5dgt)	1200VDC, 900VAC rms
		50Hz-500Hz	±(1.4%rdg+5dgt)	
		500Hz-1kHz	±(1.8%rdg+5dgt)	
400V	100mV	50Hz-500Hz	±(1.4%rdg+5dgt)	
		500Hz-1kHz	±(1.8%rdg+5dgt)	
750V	1V	50Hz-500Hz	±(1.4%rdg+5dgt)	
		500Hz-1kHz	±(1.8%rdg+5dgt)	

■ Input impedance: 10MΩ // less than 90pF

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DC Current

Range	Resolution	Accuracy	Overload Protection	Burden Voltage
400µA	0.1µA	±(1.0%rdg+1dgt)	630mA/250V Fast blow fuse	460mV max.
4mA	1µA			470mV max.
40mA	10µA			540mV max.
400mA	100µA			1050mV max.
10A	10mA	±(1.0%rdg+3dgt)		160mV max.

AC Current (True RMS, AC coupled 10% to 100% of full scale)

Range	Resolution	Accuracy	Overload Protection	Burden Voltage
400µA	0.1µA	@(50Hz-5k Hz)	630mA/250V Fast blow fuse	460mV max.
4mA	1µA			470mV max.
40mA	10µA	±(1.5%rdg+5dgt)		540mV max.
400mA	100µA			1050mV max.
10A	10mA	@(50Hz-2k Hz) ±(1.5%rdg+5dgt)		160mV max.

Resistance

Range	Resolution	Accuracy	Max. Test Current	Max. Open Circuit V
400Ω	0.1Ω	±(1.0%rdg+4dgt)	2.7mA	3.45V
4kΩ	1Ω	±(1.0%rdg+3dgt)	110µA	1.00V
40kΩ	10Ω		56µA	
400kΩ	100Ω		6µA	
4MΩ	1kΩ		600nA	
40MΩ	10kΩ	±(2.0%rdg+5dgt)	60nA	
4000MΩ	1MΩ	±(9%rdg-20dgt)+10dgt)	190nA	3.45V

■ Overload protection: 500V rms; < 10⁶ V/Hz

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Frequency (Autoranging)

Range	Resolution	Accuracy	Min. Input Freq.	Sensitivity
4kHz	1Hz	±(0.05%rdg+2dgt)	10Hz	"Lo" Range: 200mV rms 5V rms "Hi" Range: TTL level (> 2.4Vp)
40kHz	10Hz			
400kHz	100Hz			
4MHz (Trigger low)	1kHz			
20MHz (Trigger high)	10kHz			

■ Overload Protection: 500V rms; < 10⁶ V/Hz
 ■ AC coupling for "Lo" Range; DC coupling for "Hi" Range

Diode Check

Range	Resolution	Accuracy	Test Current	Test Voltage
▶	1mV	±(1.0%rdg+3dgt)	approx. 0.1mA	< 2.6V

■ Overload protection: 500V rms; < 10⁶ V/Hz

Audible Continuity Test

Range	Resolution	Description	Max. Test Current	Max. Open Circuit V
♪	0.1Ω	built-in buzzer sounds when resistance reading is below approx. 350Ω	2.7mA	3.45V

■ Overload protection: 500V rms; < 10⁶ V/Hz

TTL Logic Level Indication

Logic thresholds:	Logic 1, "▲" displays at 2.4V±0.3V
	Logic 0, "▼" displays at 0.8V±0.3V

■ Input impedance : 120kΩ approx.
 ■ Overload Protection: 500V rms; < 10⁶ V/Hz

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Capacitance Measurement

Range	Resolution	* Accuracy	Overload Protection
4nF	1pF	±(2.0%rdg+5dgt)	500V rms; < 10° V·Hz
40nF	10pF		
400nF	100pF		
4µF	1nF		
40µF	10nF		

- * With film capacitor or better
- * Relative mode should be used to zero residual

Inductance Measurement

Range	Resolution	* Accuracy	Min. O. Value
40mH	10µH	±(5%rdg+20dgt)	≥ 0.1 per 1mH
400mH	100µH	±(3%rdg+10dgt)	≥ 0.4 per 10mH
4H	1mH	±(3%rdg+10dgt)	≥ 0.6 per 0.1H
40H	10mH	±(5%rdg+10dgt)	≥ 0.7 per 1H

- Overload Protection: 0.63A/250V fast blow fuse
- Pulse repetition rate: TYP 550Hz
- * Relative mode should be used to zero residual

dBm Measurement

0dBm = 0.7746 Vrms (600Ω, 1mW)
 [True rms, AC coupled 10% to 100% of full scale]
 Note: Applicable for Voltage AC ranges only

dBm/Voltage Range	Meter Range	Accuracy		Overload protection
		50Hz to 500Hz	500Hz to 1kHz	
-25.7dBm to -5.7dBm (40mV to 399.9mV)	400mV	±0.3dBm	±0.3dBm	500Vrms
-5.7dBm to 14.2dBm (400mV to 3.999V)	4V	±0.3dBm	—	1200V DC 900V AC rms
14.2dBm to 34.2dBm (4V to 39.99V)	40V	±0.3dBm	±0.3dBm	
34.2dBm to 54.2dBm (40V to 399.9V)	400V	±0.3dBm	±0.3dBm	
54.2dBm to 59.7dBm (400V to 750V)	750V	±0.3dBm	±0.3dBm	

Section IV

Operating Instructions

Be certain that the multimeter itself is in good operating condition after carefully reading those warnings specified in Section II of this manual.

Then familiarize yourself with the following jacks and controls before using the multimeter:

1 COM

The COM jack is the common input test probe connector for all measurements

2 V-Ω-Hz-Cx

This input jack is used for measurements in conjunction with the AC/DC voltage, resistance, capacitance, diode, audible continuity, dBm, TTL level and frequency

3 µA-mA-Lx

This input jack is the input test probe connector when measuring AC/DC current within the ranges settings of 400µA to 400mA, and is used for inductance measurement

4 A

The ampere input jack is used for current measurements up to 10A continuously