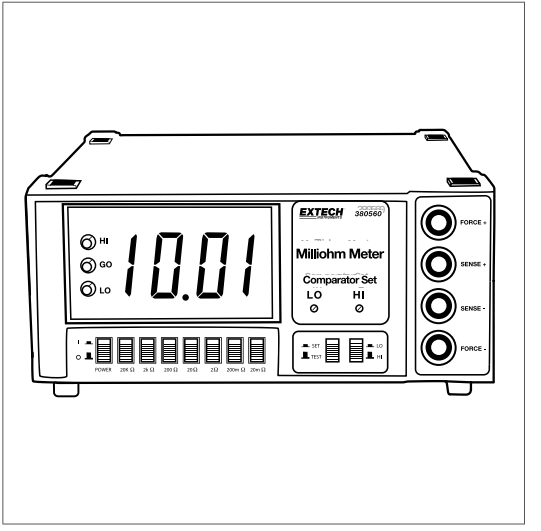
EXTECH

USER MANUAL

High Resolution Precision Milliohm Meter

MODELS 380560 and 380562



Introduction

Congratulations on your purchase of the Extech 380560 (110 V) or 380562 (220 V) bench top milliohm meter. This device offers seven resistance ranges with resolution as low as 0.01mΩ.

The four-wire Kelvin clip connection ensures optimum accuracy and the Comparator feature offers HI-LO-GO testing.

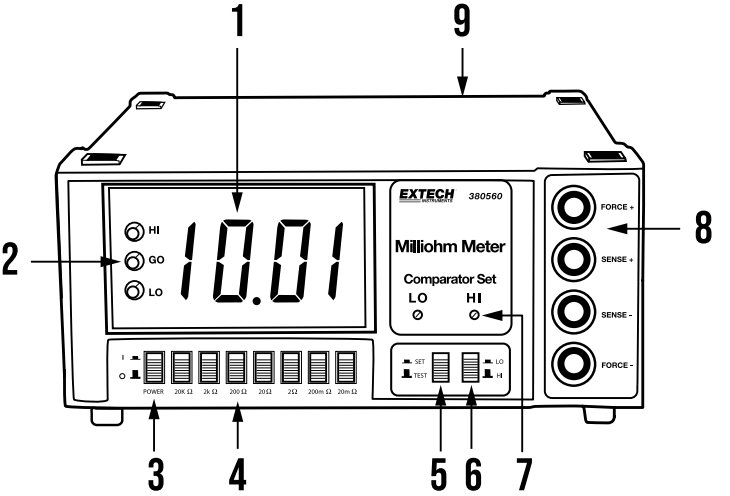
Careful use of this meter will provide years of reliable service.

Safety

⚠	Ensure that the meter is connected to the correct power source (110 V for the 380560 or 220 V for the 380562).
	Do not apply voltage to the measurement input terminals. Meter damage may result.

⎓	DC (direct current)	⚠	Caution
~	AC (alternating current)	⚠	Dangerous voltage
⏚	Ground	⧈	Double insulation

Description

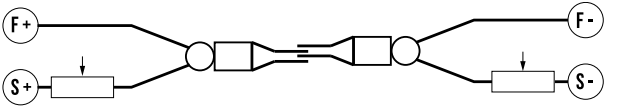


1. Display
2. HI, LO, GO status indicators (comparator)
3. Power button
4. Range buttons
5. SET / TEST button
6. HI / LO comparator adjust button
7. Comparator adjustment screws
8. Kelvin clip input terminals
9. Power connection and beeper button (on back)

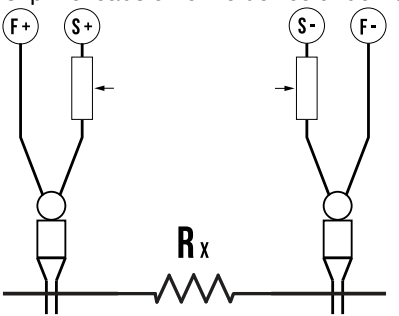
Measurement Procedure

⚠	Do not measure resistance on powered circuits. The device or circuit under test must be OFF, otherwise damage to the meter can result.

1. Connect the Kelvin test leads to the meter.
2. Set the **POWER** button to the **ON** position.
3. Set the **SET/TEST** button to the **TEST** position.
4. To verify the automatic display zero, short the test leads as shown below. If the display does not zero, the clips may be damaged or the meter may require service.



5. Select the range using the range buttons. When the resistance of the device is unknown, start with the highest range and work downward.
6. Clip the leads onto the device under test, as shown below.



7. Observe the resistance reading on the display.

Comparator Testing

The comparator allows you to sort resistance measurements according to programmable HIGH and LOW limits.

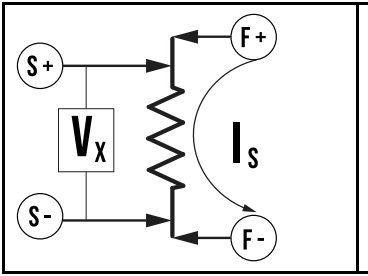
For each measurement, a comparator status LED will light. If the measurement is lower than the LO setting, the **LO** LED will light. If the measurement is higher than the HI setting, the **HI** LED will light. If the reading is between the HI and LO settings, the green **GO** LED will light.

1. Set the **SET/TEST** button to SET.
2. Set the **LO/HI** button to LO.
3. Adjust the **LO** comparator screw to the desired low limit (shown on the display).
4. Set the **LO/HI** button to HI.
5. Adjust the **HI** comparator screw to the desired high limit.
6. Set the **SET/TEST** button to TEST.
7. Set the rear beeper switch ON or OFF. When ON, the beeper will sound for each GO measurement.
8. Start testing.

Measurement Principles

The DC test current flows through the resistance from the **FORCE+ (F+)** terminal to the **FORCE- (F-)** terminal. The **S+** and **S-** (**SENSE**) terminals measure the DC voltage drop across the device under test only, thus eliminating the lead and contact resistances.

The meter displays the resistance based on the test current and the measured voltage; refer to the diagram and equation below:



Rx = Vx / Is

Where:

Vx: Voltage drop across the device under test

Is: Test current

Rx: Resistance of the device under test

Specifications

General Specifications

Display	LED type
Connection type	Four-wire Kelvin clips For replacement clips use part number 380465
Comparator	HI, LO, GO test with audible beeper
Update rate	Resistance: 1 second; Comparator: 0.5 seconds
Zero adjust	Automatic; Short test leads to check
Over range indication	“1____”
Operating conditions	32 to 122°F (0 to 50°C); < 80% RH
Power	110 V (380560); 220 V (380562); 50/60 Hz, ±15%
Weight	4.85 lbs. (2.2 kg.)
Dimensions	11 x 8.3 x 3.5 in. (280 x 210 x 90 mm)

Measurement Specifications

Specifications based on RF Field Strength < 3 V/m and frequency < 30 MHz.

Range	**Resolution**	**DC test current**	**Test voltage**	**Accuracy** (% of reading)
20 mΩ	0.01 mΩ	1 A	2.7 V DC	± (0.2% + 6 digits)
200 mΩ	0.1 mΩ	1 A	3.3 V DC	± (0.2% + 4 digits)
2 Ω	0.001 Ω	0.1 A	3.5 V DC	
20 Ω	0.01 Ω	10 mA	4.1 V DC	
200 Ω	0.1 Ω	1 mA	4.5 V DC	
2 kΩ	0.001 kΩ	0.1 mA		
20 kΩ	0.01 kΩ	10 uA		

Customer Support

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