

HP 3478A Multimeter Quick Reference Guide

This document is designed to cover the most basic operation selections and buttons for the 3478A Multimeter. This is not a comprehensive listing of functions. Please refer to the full users manual for functions or questions not covered by this users guide..

The 3478A is a full 6 digit multimeter capable of reading signals from 0.1 μ V to 300V peak. The meter is quite flexible in resolution and scaling modes, but also has a lot of advanced features for communications and programming that we will not cover here.

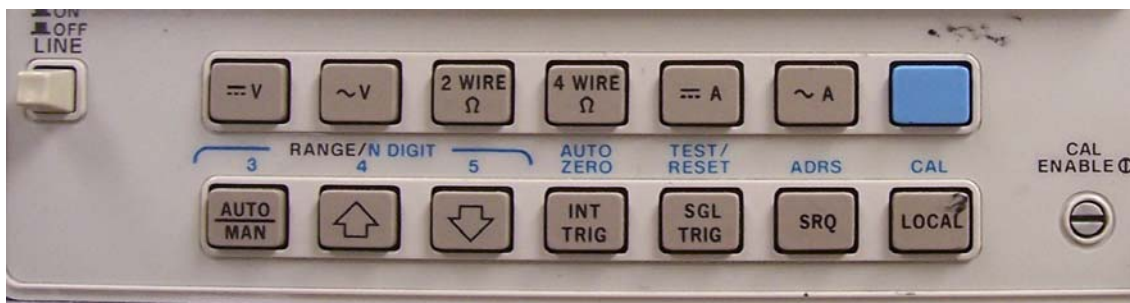
Display:



The display will indicate the number and range of the reading being taken. It also has a number of small indicators along the bottom of the screen to indicate particular modes. Much of the displayed modes are self explanatory.

Control Buttons:

There are two rows of function buttons located under the display. These buttons control what is being measured and how it is measured.



The first control to note is the “cal enable” switch to the right. This should NEVER be turned to the cal position (vertical)

The second thing to note is that some buttons are dual function. Those with dual functions are labeled by blue lettering above the button. Pressing the blue button places the keyboard into “shift” mode, indicated by the word ‘shift’ on the display. IN this mode the buttons perform the blue functions.

Function selections:

The function selections are controlled from the upper row of buttons and are as follows (left to right)

- DC Volts
- AC volts
- 2 wire resistance
- 4 wire resistance
- DC amps
- AC amps

Below this row is a second row of buttons. The first is the auto range switch. When the instrument is turned on initially it will be in auto range mode. This will change the measurement range as needed by the incoming signal. There are times when it is advantageous to have a continuous range setting. Pressing the auto/man button will illuminate the 'M RNG' indicator on the display and place the unit in manual range control. The up and down arrows will then adjust the range to your desired setting. The next two buttons control the trigger mode of the meter.

Under normal circumstances a continuous trigger (INT TRIG) will provide for a continuous update of the current value on the input connections. Some signals may change or be short lived, necessitating the use of a single trigger mode. In this mode each time the 'SGL TRIG' button is pressed it will take and hold one reading.

SRQ and LOCAL are used with external communications and can be ignored at this time.

At times it may be advantageous to limit the number of digits of resolution. Since resolution and update speed have a direct correlation, a fast changing signal may be better read with a 3, 4 or 5 digit resolution rather than the standard 6. To select this mode, press the shift button and then the desired number of digits.

The meter automatically performs auto zero's on the input to keep internal float from creeping into the readings. This mode can be turned off by selecting shift and AUTO ZERO.

TEST/RESET function issues a display test and reset to default conditions. This is a handy way to "clean up" from manual settings.

ADRS and CAL are unused for normal operations.

Input Connections:

This meter has two sets of input connections. The front panel connections and a second set on the rear panel meant for permanent mounted operations. The TERM button on the front switches between these two sets of input connectors and is a common place of frustration. Make sure the switch is out for front panel operation.



There are 5 connectors used for measurements. The middle connection on the right is the normal common connection for voltage and current readings. The upper connection on the right is the normal positive connection for ac and dc readings. The lower connection on the right side is for current readings. This is the positive connection for all mA and A readings, with the middle (LO) connection being negative.

Resistance readings take two forms, two wire and 4 wire (Kelvin) readings. For normal resistance readings with two probes, use the 2 WIRE Ω mode and the two upper right hand connections. 4 WIRE Ω mode and the two left hand connections should only be used when Kelvin clips are installed.