

# MFC 200 MULTI FUNCTION CALIBRATOR ( Source & Measure )

## Introduction

MFC 200 is a multi-funtion calibration source with both AC as well as DC voltage and current sources, milliamperere and millivolt sources, built-in standard resistance and frequency sources, making it ideal for instrument calibration. MFC 200 can also be used as a measuring instrument for voltage, current, Power, Energy and frequency. It comes with 4.3" graphical colour LCD and easy to use interface with continuous digital pot and push button keys.

## Features

- Multiple calibration parameters in one unit
- Portable and easy to carry
- Bright colour graphic LCD with easy to use interface
- AC frequency variable 45 - 65 hz
- Variable Power factor
- Low voltage and mA sourcing
- Resistance and frequency
- Power and Energy measurement
- Can be used to measure V, I, pF, Power, energy and Frequency



## Specifications

### 1. DC

Voltage : 10V - 1000V, accuracy , 0.1%+0.1V  
Current : 20mA - 10A , accuracy , 0.1%+2mA  
Stability: 200 PPM

### 2.AC

Voltage : 10V - 750V, accuracy , 0.1%+0.1V  
Current : 20mA - 15A , accuracy , 0.1%+2mA  
PF : +/- 1, accuracy +/- 0.005  
Freq : 45 - 65 Hz  
Stability: 200 PPM

### 3. Low Signal AC / DC

Voltage : 2V - 10 dc/ac, accuracy , 0.1% +10mV  
0.2V - 1V V dc/ac, accuracy , 0.1% +2mV  
10mV - 200mV ac/dc, 0.1% + 500uV  
Current : 1 mA - 20mA , accuracy , 0.1%+100 UA  
Stability: 300 PPM

### 4.Frequency

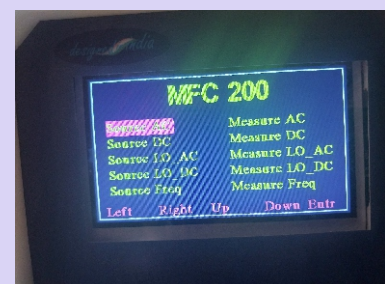
1Hz, 10Hz, 50Hz, 100Hz, 1KHz, 10 KHz, 100KHz,  
1MHz 5V signal

### 5. Resistance

1 Ohm, 10 Ohm 100 Ohm, 1K, 10K, 100K, 1M, 10M  
0.1%, TC - 20 PPM, Passive. 4Wire Measurement  
option for 1 Ohm, 10 Ohm and 100 Ohm resistors.



Low Volt Source (10 mV)



Source & Measure Option

| AC SOURCE |         |        |            |
|-----------|---------|--------|------------|
| Vset      | 100.00  | Vread  | 0.000      |
| Iset      | 1.00    | Iread  | 0.000 m    |
| PFset     | 0.500 ↑ | PFread | 0.070      |
| Freq      | 50.00   | VA     | 0.000      |
| Watt      | 0.000   | VAR    | 0.000      |
| Time      | 86      | WHrs   | 0.000      |
| Back      | SetP    | EBgn   | EEnd Start |

## Power & Energy

The unit calculate power and energy and displays along with voltage and current parameters. The energy accumulation can be started and stopped with press button. So the instrument can be used for power and energymeter calibration.

## Mechanical

|            |                        |
|------------|------------------------|
| Dimensions | 420mm x 230 mm x 280mm |
| Weight     | 12 kg (approx.)        |

## Accuracy and Stability

For a calibration source, the two parameters of importance are the accuracy and precision (stability) of the set parameter. Accuracy can be defined as the closeness of the average value to the set value and the precision as the closeness of the values to each other. The standard deviation indicates the stability and minimum and maximum values indicate the worst case readings.

The accompanying figure shows a typical values of average, minimum and maximum values and standard deviation over 2000 consecutive readings taken on Keysight DMM 34461A (basic accuracy 0.03%)

(Readings taken after 20 minutes warmup and 1 minute stabilization after setting the value).

$$\text{Stability} = 0.0035/200.0264 = 17.5 \text{ ppm}$$



## Application

- Testing and calibration of multimeters, energy meters, etc.
- Field clibration of meters
- Production line testing of meters



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