

# PORTABLE DIGITAL CAPACITANCE METER



## 1. GENERAL

### 1.1 INTRODUCTION

This Digital Capacitance Meter gives a direct reading of capacitance on a 3 1/2 digits LCD display. Nine ranges give precision readings from 0.1pF to 20mF, which includes virtually all capacitors used in electronic engineering laboratory, production, service shops and schools. Its battery operation, light weight, and small size make it a truly portable instrument.

### 1.2 FEATURES

- \* 21mm LCD display provided. MAX indication 1999.
- \* 9 Ranges form 200pF to 20mF.
- \* High accuracy in measuring.
- \* External knob adjustment of the zero value of the display, approx  $\pm 20$ pf.
- \* Dual — Slope integration A/D converter.
- \* Overload indication of “ 1 ”.

- \* Safety designed test probe.
- \* Size: 31.5mm × 91mm × 189mm ( H × W × L).
- \* Weight: 240g ( including battery ).

## 2.. SPECIFICATIONS

Accuracy is specified for a period of one year after calibration and at 18°C to 28°C (64°F to 82°F) with relative humidity to 80%.

### 2.1 GENERAL

POWER SUPPLY

9V battery NEDA 1604 or 6F22 006P

LOW BATTERY INDICATION

“  ” appears on the display

FUSE PROTECTION

100mA/250V

EXCITATION VOLTAGE

2.8V peak,MAX

OPERATING TEMPERATURE

0°C to 40°C ( 32°F to 104°F)

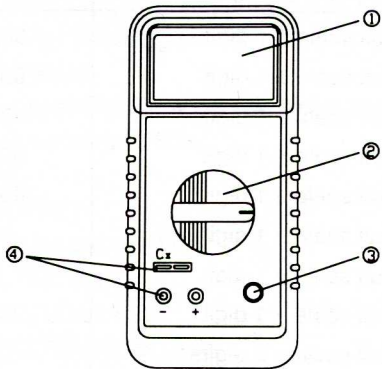
STORAGE TEMPERATURE

– 10°C to 50°C ( 14°F to 122°F)

## 2.2 ELECTRICAL SPECIFICATIONS

| Range        | Resolution   | Accuracy                                 | Test Frequency |
|--------------|--------------|--|----------------|
| 200pF        | 0.1pF        | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 800Hz          |
| 2nF          | 1pF          | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 800Hz          |
| 20nF         | 10pF         | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 800Hz          |
| 200nF        | 100pF        | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 800Hz          |
| 2 $\mu$ F    | 1000pF       | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 800Hz          |
| 20 $\mu$ F   | 0.01 $\mu$ F | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 80Hz           |
| 200 $\mu$ F  | 0.1 $\mu$ F  | $\pm 0.5\%$ of full scale $\pm 1$ digit  | 8Hz            |
| 2000 $\mu$ F | 1 $\mu$ F    | $\pm 1.0\%$ of full scale $\pm 1$ digit  | 8Hz            |
| 20mF         | 10 $\mu$ F   | $\pm 2.0\%$ of full scale $\pm 2$ digits | 8Hz            |

### 3. FRONT PANEL



1. LCD DISPLAY
2. ROTARY SWITCH
3. ZERO ADJUSTOR
4. INPUT JACKS

## 4. OPERATING INSTRUCTION

### 4.1 CAUTION BEFORE MEASUREMENT

1. Be sure that batteries are correctly placed in the battery case and connected to the battery snap.
2. Observe polarity when connecting polarized capacitors.
3. Full discharge any capacitors.
4. Never apply voltage to the test jacks, serious damage may result.
5. Do not short the test leads together. This will make extra large power consumption of the battery.  
It will show over - range indication on all ranges.


### 4.2 CONSIDERATION

1. If the capacitance value is unmarked, start with the 200pF range and keep increasing until the over - range indication goes off and a reading is obtained.
2. A shorted capacitor will read over - range on all ranges. A capacitor with low voltage leakage will read over - range, or a much higher value than normal. An open capacitor will read zero on all

measurement.

5. ROTARY SWITCH: Be sure to set " OFF " position when non using.

## 5. MAINTENANCE

- \* When the left corner of LCD display show "  ". It is necessary to replace the battery. Remove screws on the back cover and open the case . Replace the exhausted battery with a new one .
- \* Fuse rarely need replacement and blow almost always as a result of the operator's error. Open the case as mentioned above, and then take the PCB out from the front cover. Replace the blown fuse with same ratings (100mA/250V quick acting).
- \* If any faults or abnormalities are observed , the meter can not be used any more and it has to be checked out .
- \* Never use the meter unless the back cover is in place and fastened fully .
- \* Do not use abrasives or solvents on the meter , use a damp cloth and mild detergent only .

## 6. ACCESSORIES

## 6.1 SUPPLIED WITH THE CAPACITANCE METER

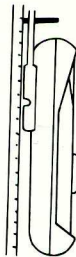
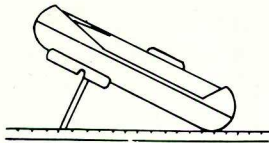
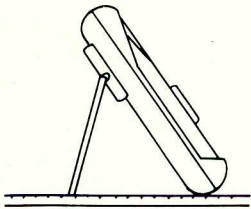
|                  |                           |
|------------------|---------------------------|
| Test Leads       | MASTECH HYTL - 6013       |
| Battery          | 9V NEDA 1604 or 6F22 006p |
| Operating Manual | HYS004270                 |
| Holster          | HYHT - 060                |

## 6.2 HOW TO USE THE HOLSTER

The holster is used to protect the meter and to make the measurement more comfortable, It comes with two stands installed together. The figure shows how to use the holster to:

1. Support the meter with a standard angle.
2. Support the meter with a small angle using the little stand.
3. Hang the meter on the wall using the little stand. Take the little stand off from the back side of the large stand and insert it into holes located upper on the holster.





HYS004270