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## SECTION 1

## START

The 72-6558 is 199999 (5½) digital Multi-Display Multimeters. They have high resolution and are designed for bench-top and systems applications.

### 1-1 Features

- Auto-range dual LCD display with back light.
- Built in RS-232 interface. Optional IEEE-488(GPIB) interface(accepts SCPI)
- True rms AC, (AC+DC) rms calculated.
- Selectable dBm reference impedance
- The reading can be displayed in either 5½, 4½ or 3½ digits
- The maximum sampling rate is 80 times / sec (72-6558 only)
- With Dynamic Recording (Min/Max/Avg), 1mS Peak Hold , Capacitance and Temperature functions ( 72-6558 only ).
- Closed-case Calibration

### 1-2 Specific Precautions

Observe all these precautions to ensure your personal safety and to prevent damage to the 72-6558 or connected equipment.

**Power Source** - The 72-6558 power source must not apply more than 250Vrms between the supply conductors or between either supply conductor and ground. A protective ground connection , through the grounding conductor in the power cord , is essential for safe system operation.

**Grounding the Multimeters** - The 72-6558 is grounded through their power cords. To avoid electric shock , the ground wire in the power cord must be connected.

**Do not Remove Covers or Panels** - To avoid personal injury , do not operate the 72-6558 without the panels or covers in place.

**Do not Operate in Explosive Atmospheres** - The 72-6558 provides no explosion protection from static discharges or arcing components. Do not operate the meter in an atmosphere of explosive gasses.

**Electrical Overload** - Never apply a voltage to a connector on the 72-6558 that is outside the range specified for that connector.

### 1-3 Options and Accessories

A) The following options are available for the 72-6558

- GPIB interface unit
- Temperature test probe

B) The following is a list of standard accessories for the 72-6558

- Power cable
- User's manual
- Test lead kit



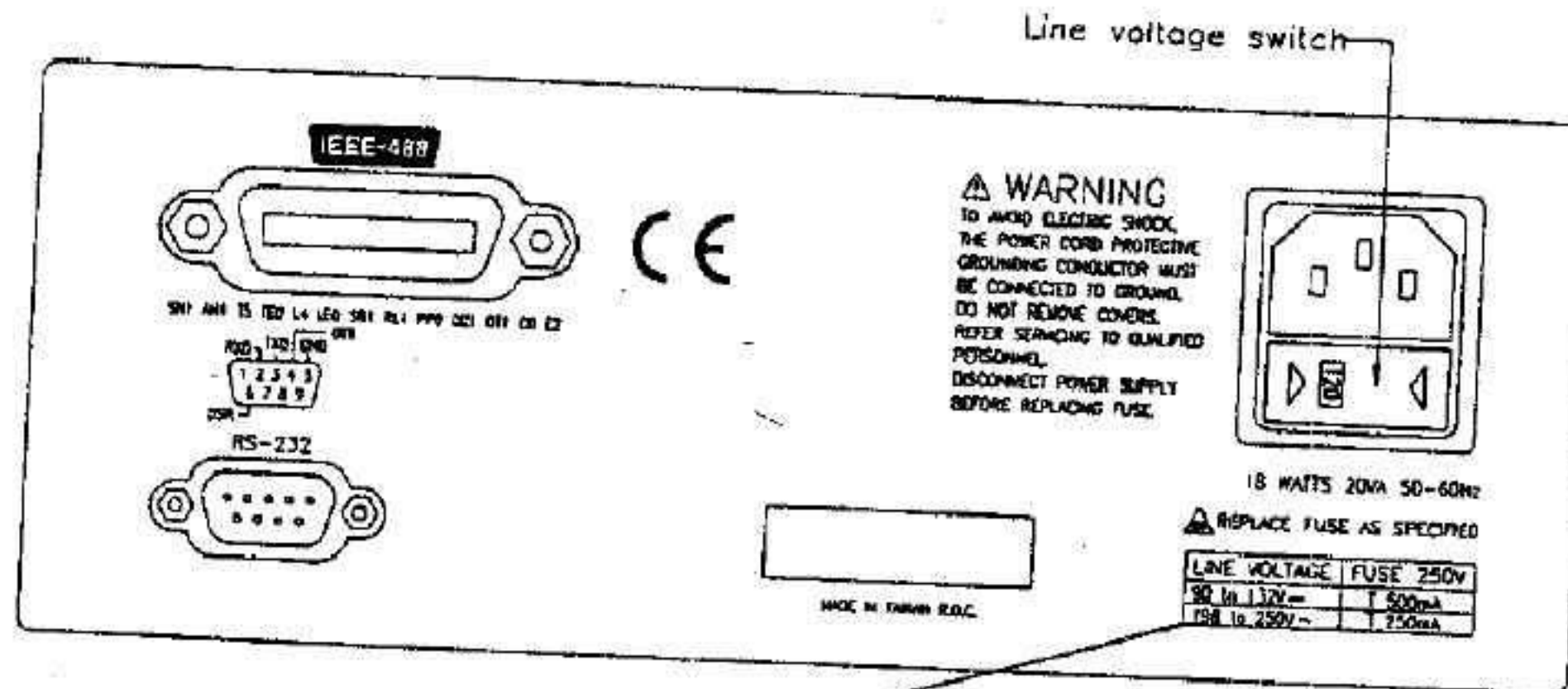
## 1-4 Line Power and Fuse

### CAUTION!

*Before switching on the instrument, make sure that it is set to the correct mains voltage of the power line.*

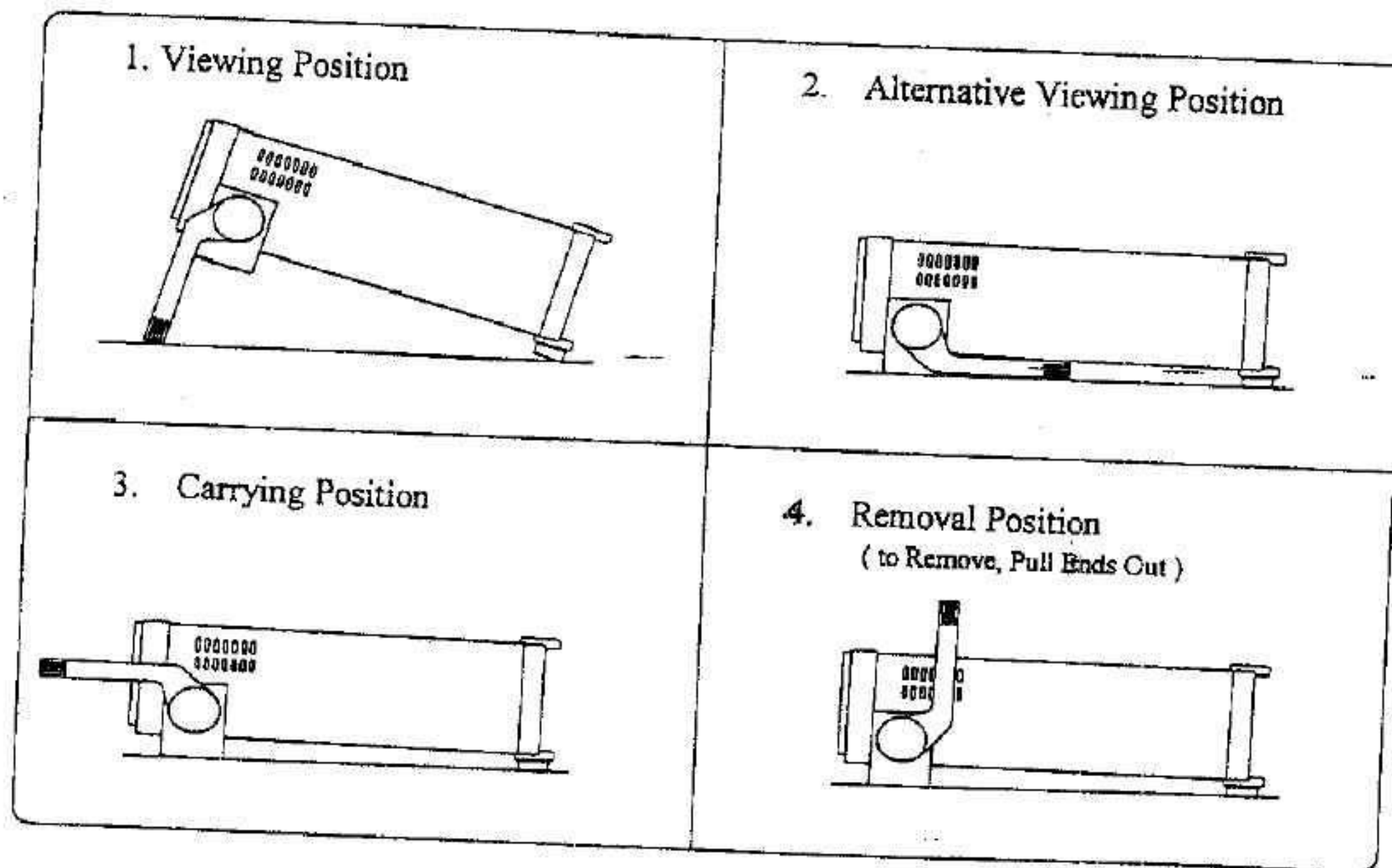
The 72-6558 accepts a primary input voltage from 90 to 250 VAC, 50/60Hz.

Figure 1-1 illustrates the location of the line voltage switch and fuse holder.



AC voltage selection fuse  
90 to 132 100,120 0.5amp, s10-b10  
198 to 250 220,240 0.25amp, s10-b10

## 1-5 Adjusting the Handle





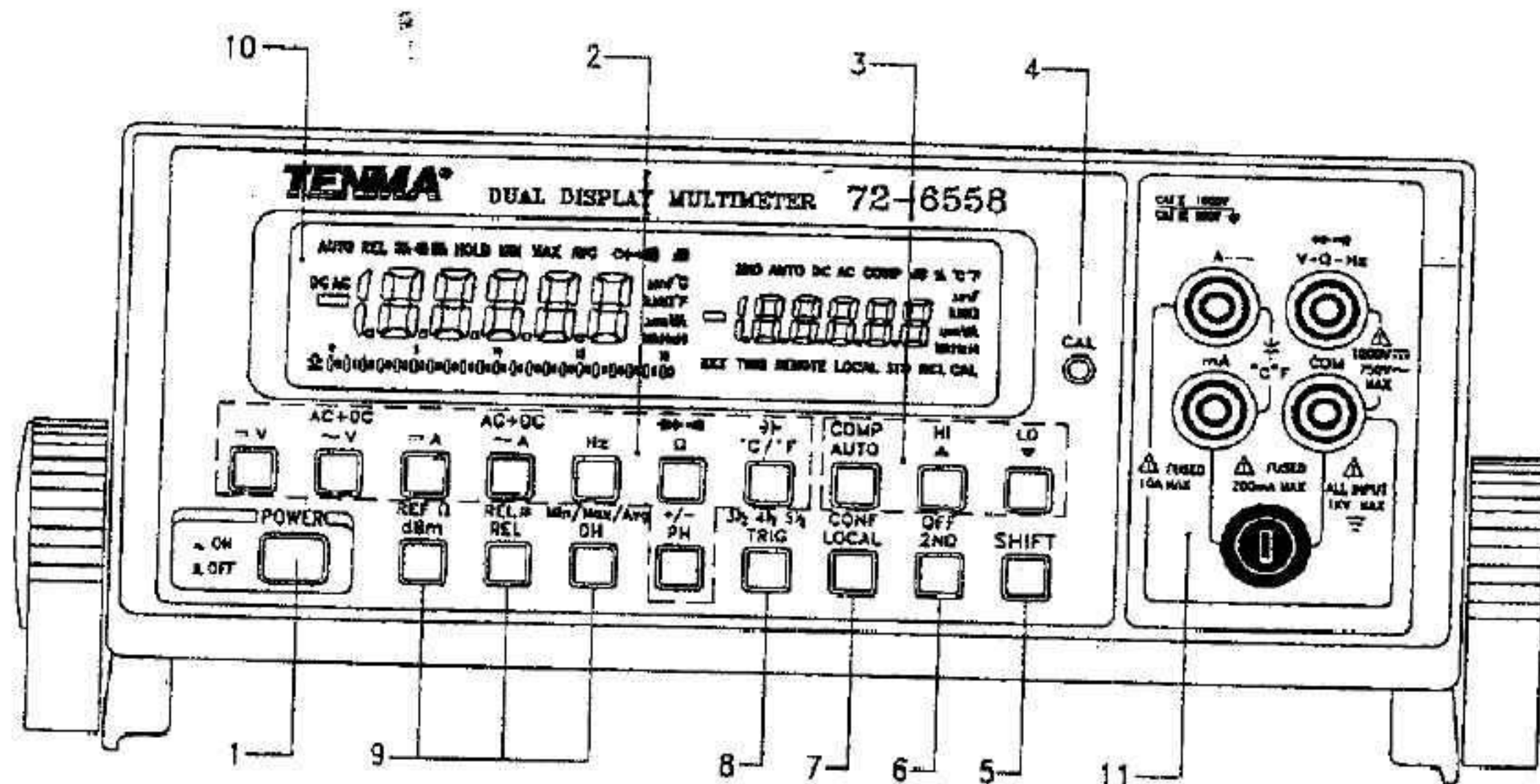
## SECTION 2

## PANEL DESCRIPTION

This section describes the front panel operational keys, displays, input terminals and the Rear panel.

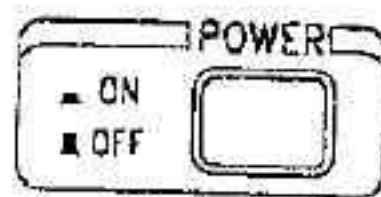
### 2-1 Front Panel

Figure 2-1 Illustrates the front panel of the 72-6558



1. Power switch
2. Measurement function selection keys
3. Comparator/ Range selection keys
4. Calibration mode selection button
5. SHIFT/ENTER key
6. Second display selection key
7. System Configuration/ LOCAL key
8. Number of Digits/ Trigger key
9. Arithmetic Function selection keys
10. Display
11. Input terminal panel

#### 1. Power Switch

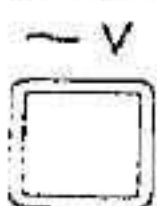


Press the switch to turn the instrument ON.  
Press the switch again to turn OFF the power.

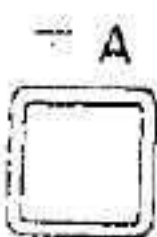
#### 2. Measurement function selection keys



: Selects DC voltage measurement

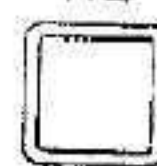


: Selects AC voltage

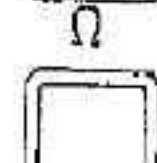


: Selects DC current measurement

Hz



: Selects frequency measurement

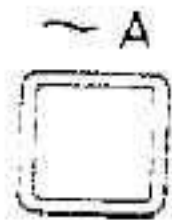


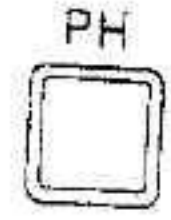
: Selects resistance measurement  
(two-line only)





: Selects temperature measurement  
(thermocouple)


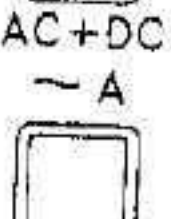



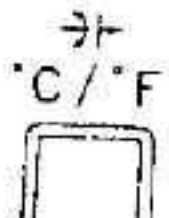
 : Selects AC current measurement


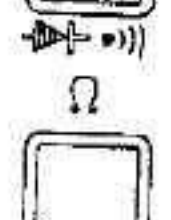
 : Selects peak hold measurement  
( 72-6558 only )


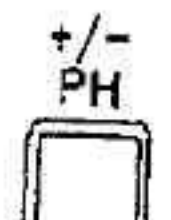
◆ Using the SHIFT key: 

  : Selects AC voltage measurement (AC+DC coupling mode)

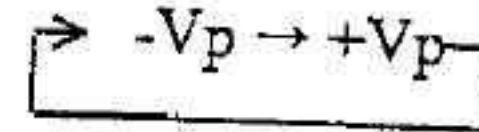
  : Selects AC current measurement (AC+DC coupling mode)

  : Selects Capacitance measurement ( 72-6558 only )

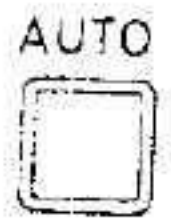
  : Selects diode/continuity testing


  : Selects the 1mS peak hold mode for direct measurement of negative, positive peak value. ( 72-6558 only )


\* Each time these keys are pressed , the state is as follows:



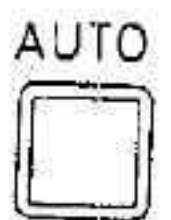
### 3. Compactor/ Range Selection keys


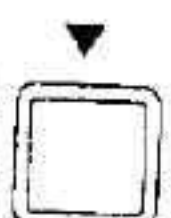
 : Selects the measurement range mode by toggle (Auto or Manual)

 : Selects the measurement range to Manual and increases it by one level.

 : Selects the measurement range to Manual and decrease it by one







\* Press these keys when in the parameter setting mode

 : Move the blinking digit to the right


  : Change the contents of the blinking digit.

◆ Using the SHIFT key: 



-   : Sets the upper limit (HI) for comparator calculation  
  : Sets the lower limit (LO) for comparator calculation  
  : Selects setting or cancelling of the comparator calculation

#### 4. Calibration mode selection button

-  : Sets the calibration (CAL) mode.  
 Press this button again to return to the normal measurement state.

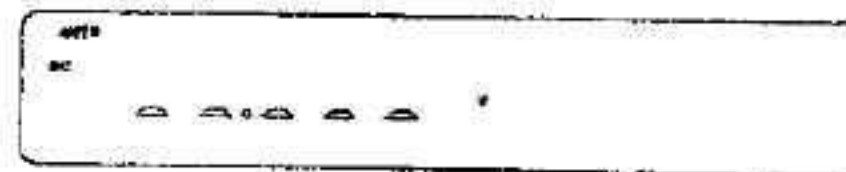
#### 5. SHIFT/ENTER key

##### ◆ Set the SHIFT mode

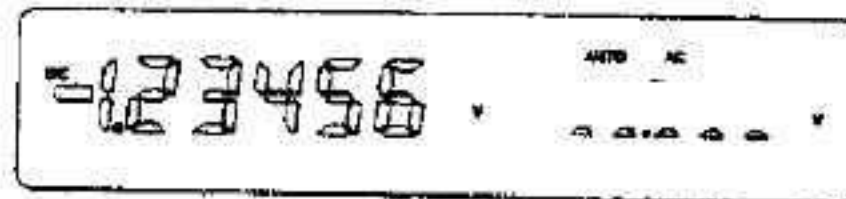
If this key is pressed before another, the function shown above that key is executed.

SHIFT mode message:

A. In SHIFT first display




B. In second display

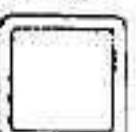
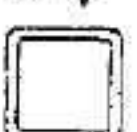




##### ◆ ENTER key

Press this key in the parameter writing mode


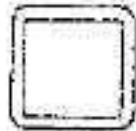

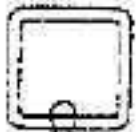





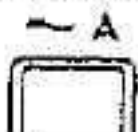

#### 6. Second Display Selection Key

-  : Sets the dual function mode for the second display

-   : Shows DC voltage reading in second display

-   : Shows AC voltage reading in second display



2ND		~ A		: Shows DC current reading in second display
2ND		Hz		: Shows frequency reading in second display
2ND				: Shows resistance reading in second display
2ND		°C / °F		: Shows temperature measurement reading in second display ( 72-6558 only )
2ND	SHIFT	~ V		: Shows AC voltage (AC+DC coupling mode) in second display
2ND	SHIFT	AC+DC		: Shows DC current (AC+DC coupling mode) in second display
SHIFT	OFF			: Cancels the dual function mode and turns OFF the second display

### 7. System Configuration / Local Key

#### ◆ Local mode



: Returns the instrument to front panel control from the REMOTE mode

#### ◆ System configuration mode



A. Selects interface setting mode

1. RS-232 Serial interface (standard).
2. GPIB interface (option).

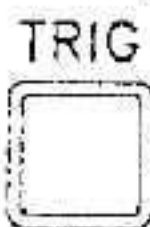
B. Selects Power-up configuration type

1. Meter clear (restore the power-up configuration to the factory setting).
2. Setting starts the initializing condition

C. Turns the beep mode ON or OFF.

### 8. Number of Digits/Trigger Keys

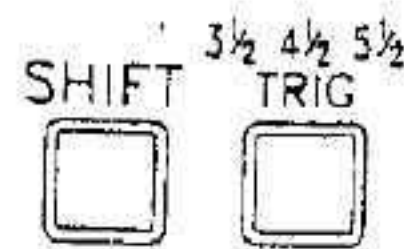
#### ◆ Trigger sampling:



: Orders measurement to start when the sampling mode is in Data Hold.

#### ◆ Number of digits change:





: When these keys are pressed, the states are as follows:  $5\frac{1}{2} \rightarrow 4\frac{1}{2} \rightarrow 3\frac{1}{2}$

## 9. Arithmetic Function Selection Keys



: Selects setting or cancelling of the dBm calculation



: Selects setting or cancelling of relative calculation



: Sets the sampling mode to Free-Run or Data Hold.

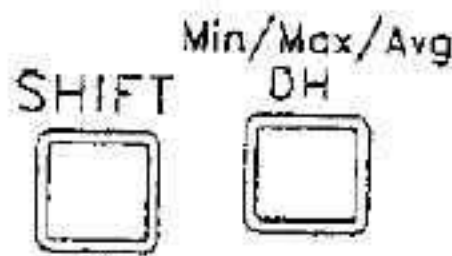


: Selects setting the REF  $\Omega$  (reference impedance) mode for dBm calculation



: Selects setting the REL# (relative constant) mode for REL calculation

## ◆ Dynamic recording selection key



: Each time press these keys the states are as following

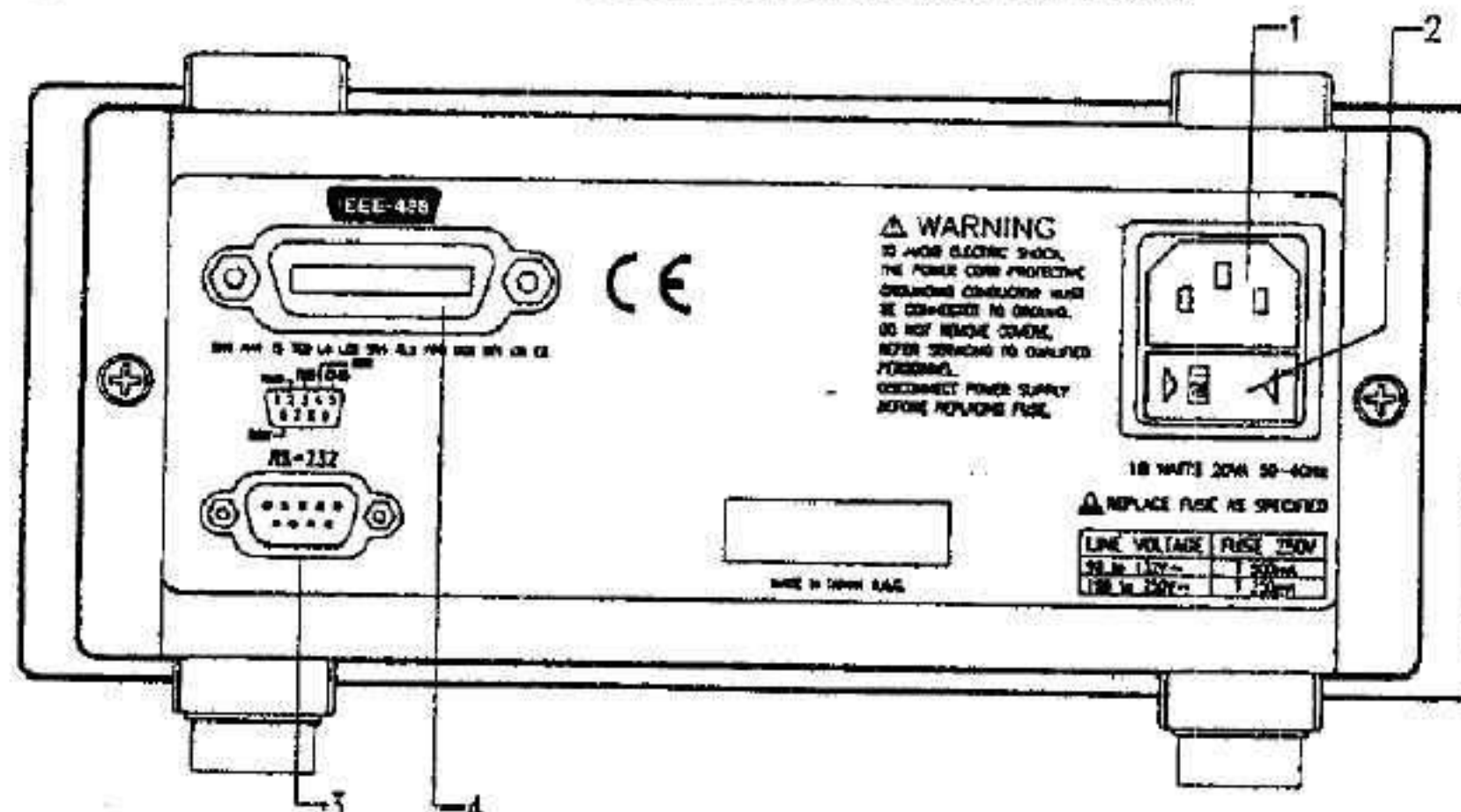
Min. → Max. → Avg.

## 10. Display

Backlight display for easy reading in dark.

## 2-2 Rear Panel

Figure 2-2 illustrates the Rear Panel of the 72-6558

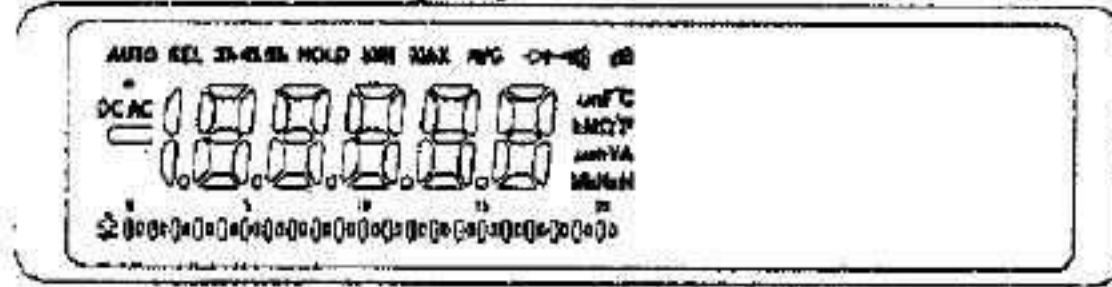




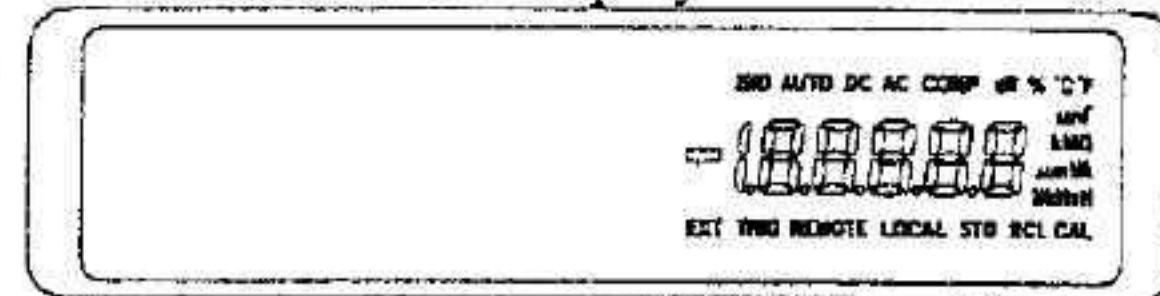
1. Power supply connector
2. Power supply change: Selects the line power voltage type to 100/120/220/240V.
3. RS-232 connector (standard equipment)
4. IEEE488 (GPIB) interface connector (optional)

## 2-3 Display

### 2-3.1 First Display

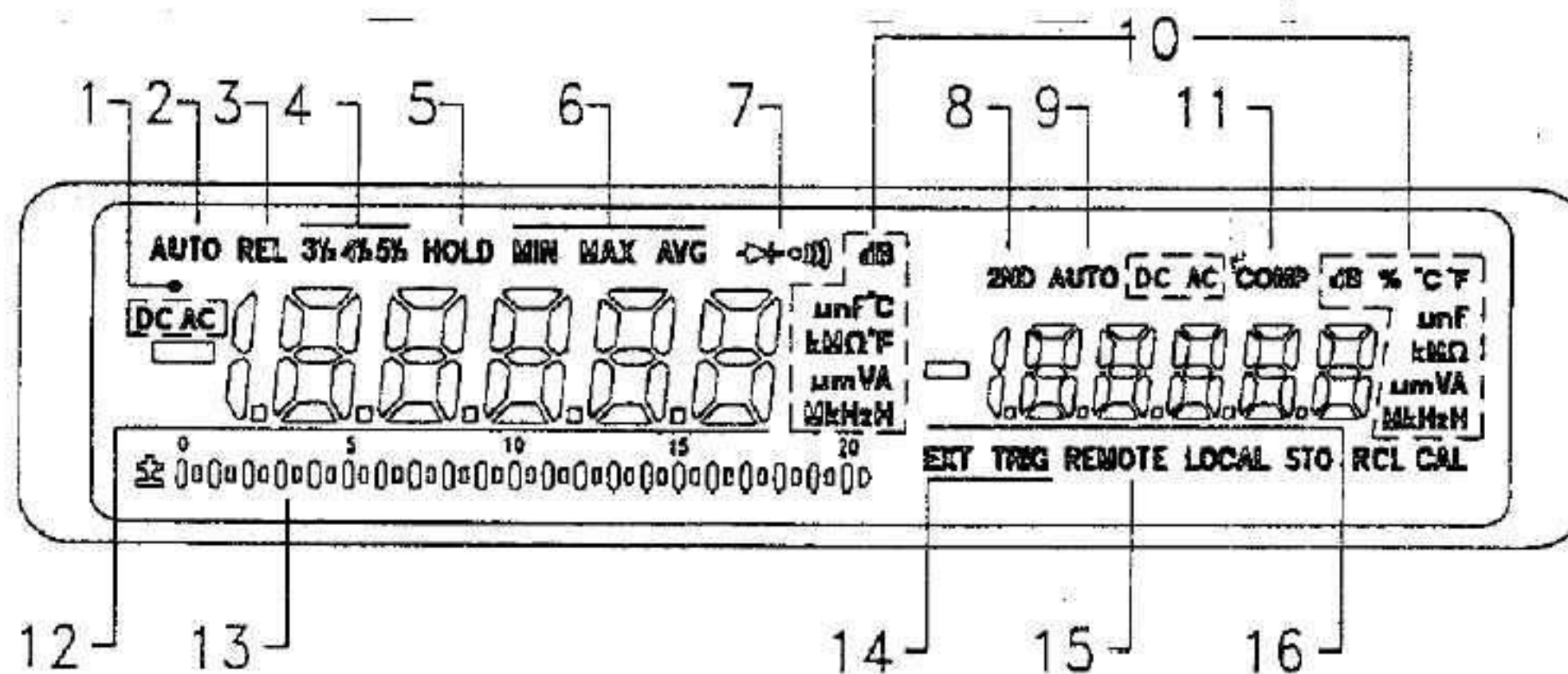


### 2-3.2 Second Display



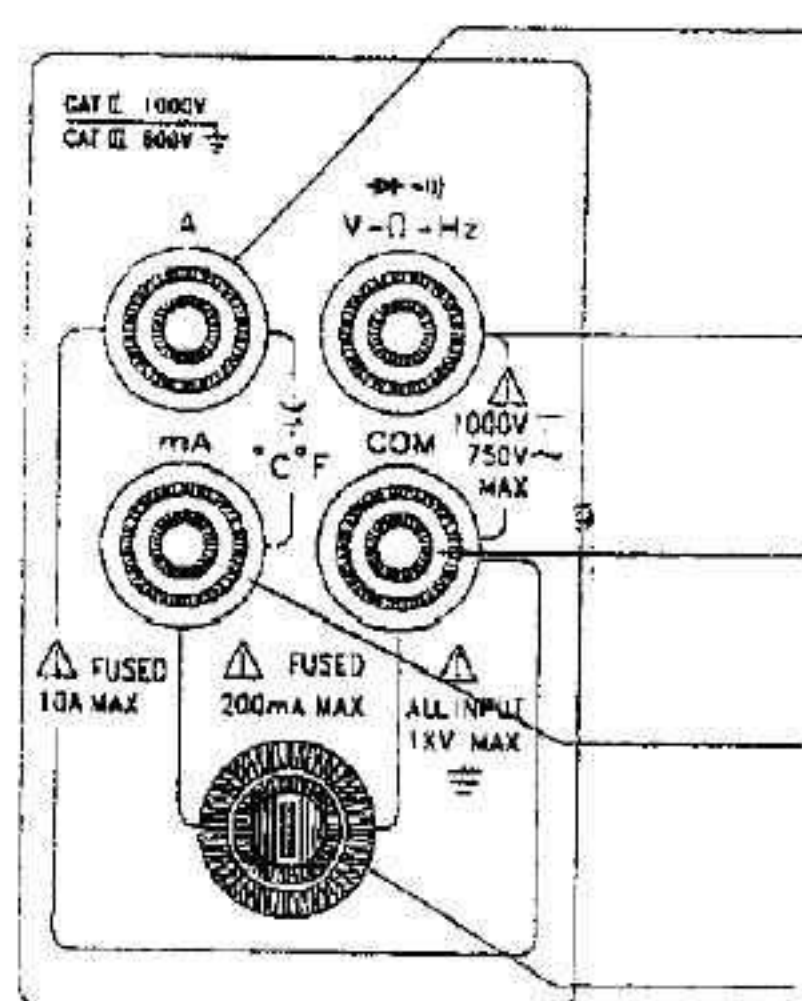
## ◆ Display Annunciators

- |                               |                                   |
|-------------------------------|-----------------------------------|
| 1. Sampling indicator         | 9. Auto range                     |
| 2. Auto range                 | 10. Function unit annunciators    |
| 3. REL mode                   | 11. Comparator function indicator |
| 4. Sampling rate & resolution | 12. Numeric data display          |
| 5. Data Hold mode             | 13. 41 segments analog bar graph  |
| 6. MIN/MAX/AVG modifier       | 14. Trigger enable indicator      |
| 7. Diode/Continuity test      | 15. Remote state                  |
| 8. 2ND indicator              | 16. Numeric data display          |





## 2-4 Input Terminal



10A input Terminal for DC/AC current measurement.  
Return Terminal for Capacitance, Temperature measurements.

Input Terminal  
Volts, Ohms, Hz, Diode/Continuity test

Common Terminal

200mA Input Terminal . Capacitance , Temperature measurements.

200mA Input Terminal Protection Fuse Holder

### ◆ Input Limits

Function	Input Terminals	Maximum Input
$\text{—} V$	$V\Omega\rightarrow$ Hz and COM	1000V DC
$\sim V, Hz$	$V\Omega\rightarrow$ Hz and COM	750V AC rms, 1000V peak, $1 \times 10^7 V\text{-Hz}$ normal mode, or $1 \times 10^6 V\text{-Hz}$ common mode (whichever is less)
$\sim mA, Hz$	mA and COM	200mA DC to or AC rms
$\sim A, Hz$	A and COM	10A DC or AC rms
$\rightarrow$ °C / °F	mA and A	
$\Omega$	$V\Omega\rightarrow$ Hz and COM	500V DC or AC rms on all ranges
$\rightarrow$ $\rightarrow$	$V\Omega\rightarrow$ Hz and COM	500V DC or AC rms
All Function	any terminal to earth	1000V DC or peak AC



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