

# BUTT SET

## MODEL TT-200



**Instruction Manual**

**AMPROBE**



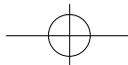
## INTRODUCTION

The TT-200 is designed for the installers, repair technicians, and other authorized personnel for line testing and temporary communications. The test set employs the latest in integrated circuit design to provide DTMF (Touch Tone) and dial pulse output. Different from other test sets, it contains a mega ohm (M ) meter for testing insulation resistance and telephone capacity. The repairman can independently find out line conditions (faults) without the help of the central office (CO) by measuring the insulation resistance and telephone capacity.

The TT-200 is made of high impact materials providing excellent insulating properties. The rugged case is designed for rough handling and shocks normally associated with field service.

## FEATURES

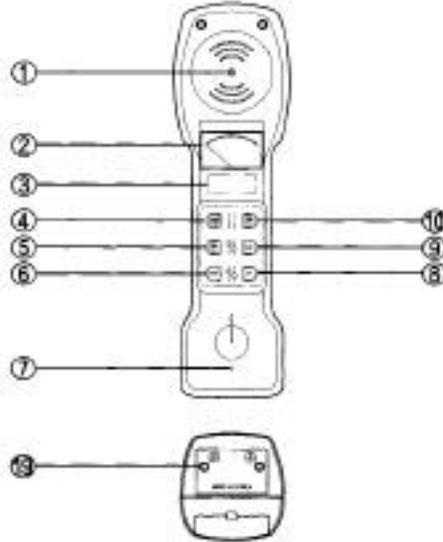
1. Monitor (Data Safe) Function.
2. Talk Function.
3. Tone/Pulse Dialing.
4. Last number redial in both tone and pulse modes.
5. Hook and Flash Function.
6. Terminating Function.
7. Speaker Phone Function.
8. Polarity Checking.
9. Mute Function.
10. Waterproof.
11. Piercing pin and angled bed nails cord (ABN).
12. Insulation Resistance Measurement.
13. Earth-State.
14. Line-Cut (Open).
15. Line-Short.
16. Telephone Capacity.



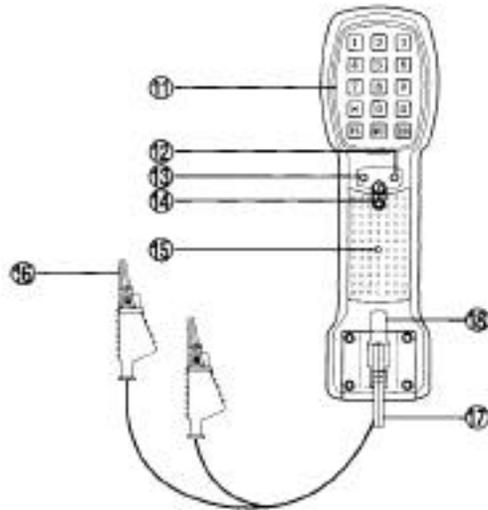
**PHYSICAL DESCRIPTION (See Figure 1)**

1. **Receiver**
2. **Mega Ohm (M $\Omega$ ) Meter**
3. **Company logo**
4. **TONE/PULSE:** On/Off switch for pulse or tone.
5. **TEST/CALL:** On/Off switch. Off position for M insulation meter and On for subscriber calling with the METER/CALL switch.
6. **HOOK:** On/Off switch.
7. **Microphone**
8. **SP:** Speakerphone switch.
9. **MON:** On/Off switch for line monitoring without data loss.
10. **METER CALL:** Button for Insulation Resistance measurement and subscriber calling.
11. **Dial Keypad:** The recessed 16-button keypad is housed in the receiver end of the housing. The recessed design provides physical protection to the keyboard and prevents accidental button operation.
12. **Polarity LED**
13. **Polarity LED**
14. **P:** Polarity button.
15. **Speaker Phone Output**
16. **Cordset:** The cord set with one red and one black conductor. Each conductor is fitted with an alligator clip, offset 20 degrees, with piercing pin and angled bed nails cord (ABN). (P/N TT-200-1)
17. **Belt clip:** A spring-loaded belt clip secures to a belt loop or D-ring.
18. **Cord Line Hanger**
19. **Non-Slip Pad:** The form and non-slip pad on back of the handgrip frees up both hands while the Butt set rest on the shoulder.
20. **Battery Cover:** Compartment for one 9V battery.

### FRONT



### BACK





## OPERATION INSTRUCTIONS

### PLACING A NORMAL CALL

A calling signal is sent to the subscriber's telephone causing it to ring.

1. Set to data safe mode by pressing the MON (9) switch.
2. Connect the alligator clips to L1 and L2 of subscriber side.
3. Listen for a clear line (no data).
4. Release the data safe mode by pressing MON switch again. A dial tone should be heard.
5. Select the type of dial signaling required, touch-tone or dial pulse, with the TONE/PULSE switch. Note that the phone will be in the last type selected.
6. Enter the desired number on the keypad. For touch-tone signaling, tones associated with the respective key will be generated. Rotary dial signaling digits will automatically be pulsed out at the correct rate. To terminate the call, press the HOOK button.

### SUBSCRIBER CALLING

A calling signal is sent to the subscriber's telephone causing it to ring. You can also talk with the subscriber. This function is useful when the 48V power is not supplied from the telephone office.

1. Connect the alligator clips to L1 and L2 of subscriber side.
2. Push the CALL (5) button and the LED will illuminate.
3. Push the METER CALL (10) button to make subscriber's phone ring. To conserve the battery life, press button several times monetarily.

### HOOK FUNCTION

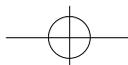
This switch establishes a ON-HOOK or OFF-HOOK condition to the line.

1. Connect the alligator clips to L1 and L2 of subscriber side.
2. The HOOK LED is off indicating an OFF-HOOK condition and dial tone is present.
3. Pressing the HOOK (6) button, the LED will illuminate and the unit is ON-HOOK. Incoming call will cause the bell to ring.

### TONE/PULSE

This position is used to select between the two dial modes. The PULSE position selects rotary style dial pulse signaling. The TONE position selects the DTMF signaling.

1. Connect the alligator clips to L1 and L2 of subscriber side.
2. Press the TONE/PULSE (4) to select the type of dial signaling required, touch-tone or dial pulse. Note that the phone will be in the last type selected.





## OPERATION INSTRUCTIONS (CON'T)

### REDIAL (RD)

Will redial the last number entered.

1. Press the FS button for a new dial tone.
2. Press the RD button to redial the last number entered. Up to 32 digits can be redialed.

### MUTE (MU)

When pressed, the transmitter is muted and the side tone is eliminated.

1. Press and hold the MU to mute, release to talk.

### FLASH (FS)

The tester produces a line break (hook flash). It is typically used for register recall or redialing.

1. Press the FS button for a new dial tone.

### SPEAKER PHONE FUNCTION (SP)

This allows you to listen handsfree

1. Connect the alligator clips to L1 and L2 of subscriber side.
2. Pressing the SP (8) button activates the speakerphone.
3. Pressing the SP (8) button again will turn off speakerphone function.

### MONITOR FUNCTION (MON)

The monitor position provides a high impedance (over 100k ) coupling to the line without disrupting conversation, data or signaling.

1. Press the MON (8) button and the LED will illuminate. The unit is in a high impedance condition.
2. Connect the alligator clips to L1 and L2 of subscriber side.
3. Pressing the MON button again, the LED turns off and the high impedance condition is removed.

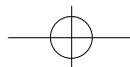
### POLARITY INDICATOR

The line polarity is checked and indicated on the red or green LED's.

1. Connect the alligator clips to L1 and L2 of subscriber side.
2. Press the P (14) and the two LED's indicate the polarity as follows.

Green LED 'ON' The line with red alligator clip is TIP (+).  
The line with black alligator clip is RING (-).

Red LED 'ON' The line with red alligator clip is RING (-).  
The line with black alligator clip is TIP (+).





## OPERATION INSTRUCTIONS (CON'T)

### INSULATION RESISTANCE & CAPACITY MEASUREMENT

1. Connect the alligator clips to L1 and L2 of subscriber side.
2. Push the METER CALL (10) button.
3. The insulation resistance will be displayed on the 'Mega Ohm meter, when the METER CALL button is pressed.

Generally, there are two conditions:

*Normal condition* (good insulation between L1 and L2)

The meter scale goes to 0.2 generally and then back. This is caused by the capacity of the connected subscriber's telephone or the line and terminal.

*Abnormal condition* (bad insulation between L1 and L2)

The meter scale goes up to a low value (below 1M ) and stays there. This indicates a faulty circuit on L1 and L2.

**Note** - The meter will not move if the line is an open circuit.

### BATTERY CHECK

Indicates if 9-volt battery requires replacement.

1. Connect the two alligator leads together.
2. Press the METER CALL (10) button. A good battery is indicated if the needle is in the BT section of the meter. If the needle is below, the battery should be replaced.

### ELECTRICAL

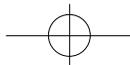
Loop Resistance	less than 300 (talk mode)
Monitor Impedance	greater than 100k

### ROTARY DIAL OUTPUT

Pulsing Rate	100pps +/-0.8%
Make Rate	33 +/-3%
Minimum Pulse	600ms over

### DTMF OUTPUT

Frequency Deviation	+/-1.8%
Level Deviation	High -8dBm, Low -6dBm +/-0.8%
Return Loss	2dBm
Redial	32 digits
Insulation Resistance	0.1- 10M (DC 180V)
Power Source	DC 9V





## OPERATION INSTRUCTIONS (CON'T)

### PHYSICAL

Length	2.71" (69mm)
Width	10.08" (256mm)
Height	3.35" (85mm)
Weight	20 ounces (560g)

## MAINTENANCE

### BATTERY REPLACEMENT

1. Remove the two screws from the battery compartment
2. Remove the cover and the clear rubber gasket
3. Replace the battery with an alkaline or lithium 9V battery (polarity indicated on cover).
4. Install the gasket, cover and screws.

### WARRANTY

Congratulations! You are now the owner of an AMPROBE® instrument. It has been quality crafted according to the highest standards of quality and workmanship. This instrument has been inspected for proper operation of all its functions and tested by qualified factory technicians according to the long-established standards of AMPROBE®.

Your AMPROBE® instrument has a limited Lifetime Warranty against defective materials and/or workmanship provided that the seal is unbroken or, in the opinion of the factory, the instrument has not been tampered with or taken apart. This warranty is limited to the original purchaser and is not transferable.

Should your instrument fail due to defective materials, and/or workmanship, you may return it along with a copy of your dated bill of sale which must identify instrument by model number and manufacturing number. Please contact the factory at the number on the back cover of this manual to obtain a Return Materials Authorization and return instructions.

**IMPORTANT:** For your protection, please use the instrument as soon as possible. If damaged, or should the need arise to return your instrument, place it in a shipping carton packed with sufficient packing material. It must be securely wrapped. Amprobe is not responsible for damage in transit. Be sure to include a packing slip (indicating model and manufacturer number) along with a brief description of the problem. Make certain your name and address appears on the box as well as the packing slip.

-Outside the U.S.A. the local Amprobe representative will assist you. Above limited warranty covers repair and replacement of instrument only and no other obligation is stated or implied.



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