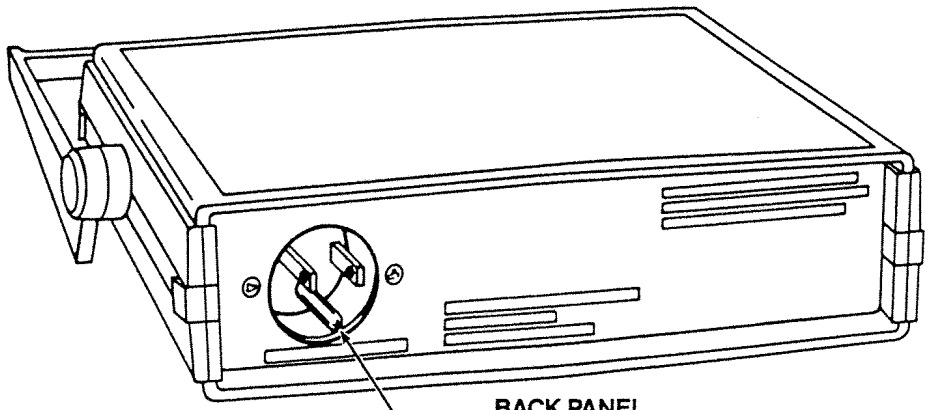
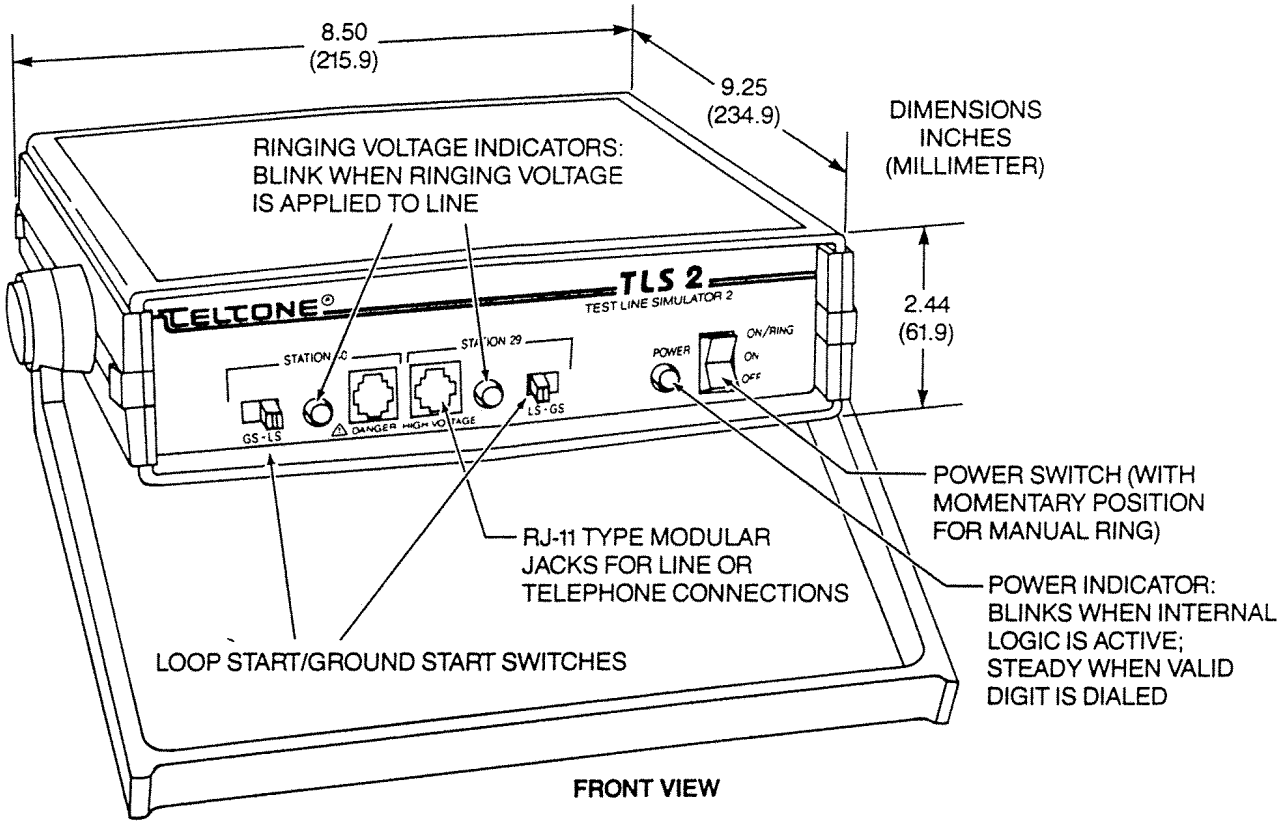


BACK PANEL

AC POWER RECEPTACLE



FRONT VIEW

CAUTION: WHEN RINGING IS APPLIED, TIP IS GROUNDED AND RING OF THE MODULAR JACKS CARRIES ±100 V REFERENCED TO GROUND

Figure 1 Test Line Simulator 2 (TLS 2)

(e) To test wiring and operation of individual stations and lines only (see paragraph 3.02).

B. Test Procedures

Caution: When ringing is applied, Tip is grounded and Ring of the modular jacks carries 100 V referenced to ground (alternating polarity).

Caution: The ringing generator is protected against short circuits up to 1 minute only. Failure to observe this limitation may result in damage to the TLS 2.

3.05 ***Manual Continuous Ring Test:***

(1) Depress and hold the power switch in the ON/RING position.

(2) Verify that both telephones ring and both TLS 2 ring indicators blink.

3.06 ***Automatic Continuous Ring Test*** (Touch-Tone phones only):

(1) Go off-hook with one telephone and verify that dial tone is present.

(2) Dial * and verify that the other telephone rings and that ringback tone is present at the calling telephone.

(3) Dial any keypad character except *(i.e., 0-9 or #); ringing should stop.

(4) Go on-hook (wait about half a second before proceeding).

3.07 ***Automatic Interrupted Ring Test*** (Tone or Rotary phones):

(1) Go off-hook with one telephone and dial the TLS 2 station number for the other telephone (either 29 or 40).

(2) Verify that interrupted ringing occurs at the other telephone (1.6 seconds on/4.8 seconds off).

(3) Go off-hook at the other telephone and verify that a talk path is established.

(4) Go on-hook with both telephones.

(5) Repeat 3.06 and 3.07 with the other telephone.

3.08 ***DTMF Dial Pad Check:*** The following verifies that all seven frequencies generated by the DTMF pad are operating and that the telephone can receive audio signals.

(1) Connect the telephone under test into either TLS 2 station.

(2) Depress and release the switchhook, listen for dial tone, and dial 29. Verify that dial tone stops, ringback tone is heard, and the power-on indicator changes from blinking to steady while a digit is being sent. Go on-hook.

(3) Repeat the testing procedure stated in (2), but dial 40 instead of 29.

3.09 ***Telephone Transmitter Check:*** Transmitter operation can be checked using the TLS 2 by any standard procedure (e.g., go off-hook, break dial tone, tap on the mouthpiece, and verify that sidetone is heard in the earpiece).

4. SPECIFICATIONS

AC Power Input	
Voltage	115 ± 15 VRMS
Current	0.2 A max
Fuse (internal)	1/4A (fast blow)
Frequency	49.5 to 60.5 Hz
Power Dissipation (with ringing generator shorted)	20 VA max
Telephone Line Circuit (Loop Start Operation)	
Voltage (loop start operation)	−24 ± 3 V ref. Ring to Tip; open circuit
Current	
Maximum (Ring and Tip shorted)	68 mA
Minimum (at maximum loop of 250 ohms excluding telephone)	20 mA

Telephone Line Circuit (Ground Start Operation) (See Note 1)

Tip ground connect	175 ± 35 ms after uninterrupted ground (1000 ohms or less) is applied to Ring
Tip ground release	375 ± 35 ms after loop opens
Forced connect	Connects Tip ground upon ringing
Forced disconnect (See Note 2)	375 ± 35 ms after Tip ground has been released from the other line
Maximum current (Ring)	135 mA (Ring grounded)
Maximum current (Tip)	3 mA (Tip ground released)

Ring Source

Voltage	100 ± 10 VAC peak
Current	80 mA max
Frequency (square wave)	20 Hz ± 1%
Maximum load	4 ringer equivalences (Class A)
Trip	1000 ohms or less

DTMF Detection

Frequency	
Accept	± (1.5% + 2 Hz)
Reject	± 3.5%
Tone time	40 ms min
Interdigital time	40 ms min
Amplitude	+4 to −18 dBm per frequency and ≤ 6dB difference between frequencies

Rotary Detection

Rate	5 to 23 PPS
Interdigital time	315 ms min
Break time	30.5 ms min
Make time	12.5 ms min
End-of-digit recognition time	95 ms min

Loop Current Detect (see Note 3)

On-hook detect	300 ms ± 20 ms
Off-hook detect	100 ms ± 20 ms

Interrupted Ring Timing

Ringing	1.6 sec ± 10%
Silent	4.8 sec ± 10%

Tone Characteristics

Ringing frequency	20 Hz ± 1%
Ringback tone	440 Hz + 20Hz ± 1%
Dial tone	440 Hz ± 1%

Environment

Operating temperature	0 to 55° C
Storage temperature	-40 to 55° C
Humidity	85% non-condensing

Note 1: After Tip ground is connected, the operation and specifications are identical to loop start operation until Tip ground is released.

Note 2: The time will be the same if the other line is in loop start operation.

Note 3: In ground start operation the reference is from the time Ring ground is applied.

5. ORDERING INFORMATION

5.01 The TLS-2 can be ordered with or without the power cord (see Table 1). Compatible power cord and clip cables are available at retail outlets and can be furnished by the user. A carrying pouch is available as an option.