

6 0 9 . 0 1 1 . 1 8 5

ACT/452 Telephone Test Set

Operating Instructions

Features:

- Safe with Data Lines:
 - High impedance active monitor
 - Active polarity indication
 - Digital line voltage alarm
- PBX compatible including:
 - Pause
 - Ground Start
- Flat battery - always ready feature
- Over current protection
- Battery saving auto power-off / on
- Lightning surge protection
- Rugged belt hook
- Long line operation
- Three position volume boost
- Finger tip microphone Mute
- Headset socket for hands free
- Tone/pulse easy selection
- 32 Digit last number redial
- Acoustic Shock Protection
- Rugged drop proof design
- 1 year warranty



Specifications:

Long Line Operation: 48 V feed > 5 k Ω Minimum Current <10 mA
DC Resistance:
Off-hook:
TALK modes (Handset and Headset): <300 Ω
On-hook:
k Ω : >5 M Ω (10 μ A @ 50 VDC)
Monitor: >5 M Ω (20 μ A @ 100 VDC)
Monitor Impedance:
>100 k Ω @ 1 kHz
Dialling:
Pulse dial: 10pps, break 60%
DTMF/Tone dial level: -3 dBm typical
Flash/Timer Break Recall: 600 ms (switchable 100, 300 ms)
Memory Dialling:
32 Last Number Redial
PBX Pause: 2 seconds (can be chained and stored in memory)
Acoustic Shock Protection:
To TIA/EIA-470-B 4.2.2.6
Alkaline Battery Life:
1 year under normal conditions or 5 days continuous monitor of very loud signal.
Drop Test:
Compliant to 3m
Environmental:
Operating temp: -5C to +40C
Storage: -20C to +70C
Weatherproof. IP30



The Old Smithy
Church Road
Rainford
St. Helens
Merseyside WA11 8HD (UK)
Tel: +44(0)1744 886660
Fax: +44(0)1744 886661
Web: www.actmeters.com

Front Features

1. (TBR / FLASH) Timed Break Recall

Interrupts line current for the duration set by the switch under the battery (select from 100, 300, 600 ms). Factory setting - 100ms.

2. LNR (Last Number Radial)

Radials up to 32 previous digits and any pauses.

3. POL (Hi-Z Active Polarity)

It is important to have good a battery installed to use this mode. No clicks are induced on the line when the POL button is pressed.

Polarity works in all modes, even in parallel with an off-hook phone.

4. PAUSE

Two second pauses are added with every press of this button, useful for easy access to chargecards etc., use in conjunction with LNR feature.

5. GS (Ground Start / Earth Calling)

An optional 3-wire test lead (Part No.M0459-03) is required to use this feature.

Ensure the croc clip is connected to ground, then press just after moving to talk mode. Release when dial tone heard.

6. TONE/PULSE selection

Dialling method. Select before switching to 'TALK'. Pressing '*' in pulse mode, switches the tester to DTMF for the remainder of the call.

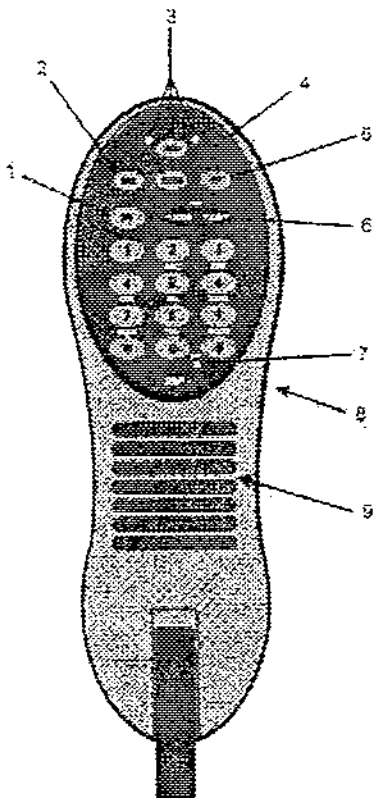
Use as on a conventional phone.

7. BATT (Battery Low Warning)

In 'MON' mode, when the LED first illuminates it indicates that approximately 2 hours of continuous operation remains.

Note: This feature does not work in 'TALK' and 'OFF'.

8. Main Mode Switch



A. TALK (off-hook) Use this mode for making / answering calls. The battery is not required. 'Over current protection' protects the tester from a zero impedance feed. Select tone/pulse before or after switching to 'TALK'.

Beware! - Will disrupt traffic if connected to digital line while in TALK mode.

B. OFF (on-hook) The tester should be left in this mode when not in use (stand-by), as it alerts the user to ringing voltages on the line, but uses no battery current.

To reduce disruption to digital traffic accidentally encountered, the ringer impedance is higher than normal on-hook impedance (But MON mode is best for checking unidentified lines).

Beware! Connecting the Compact Tester in the TALK Mode to a line will disrupt any Digital traffic.

C. MON (Monitor) This is the tester's highest AC impedance mode, and should be used for checking the line before switching to 'TALK'.

A good battery is required for this mode.

The tester will auto power-off within 5 mins, when not connected to a powered line. It will also auto power-on when connected to a powered line if left in 'MON' position .

In monitor mode no line current is taken, no sound is passed from microphone to line.

EXPLAINED: Unusual sounds in the earpiece/headset

Hiss: fax, modem or digital traffic.

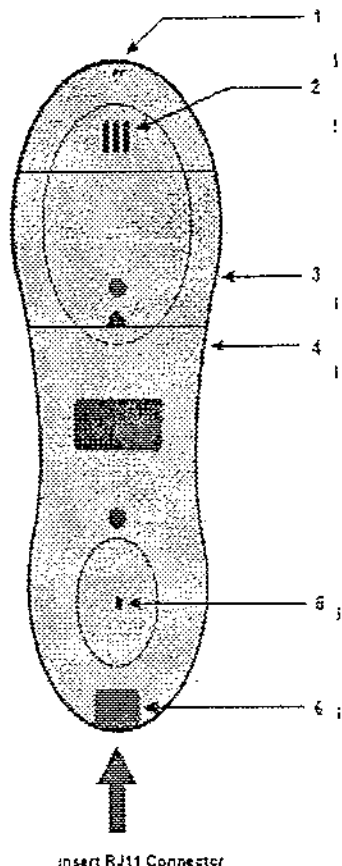
loud, continuous 50 Hz hum: may be AC.

loud, cadenced 20 Hz hum: may be ringing. Check by switching to 'OFF'

9. Ringer

In 'OFF' mode, the ringer will warble in response to the ringing current, even if the battery is not installed.

Back Features



1. Headset socket

Plugging in a CVE headset will switch transmit / receive (TALK mode) and receive (MON mode), from handset to headset.

! For safety reasons use only headsets tested and approved by Chesivale Electronics.

2. Earpiece

Listen here in 'MON' and 'TALK' modes, when not using the headset.

3. Mute

Press and hold for microphone mute in 'TALK' mode.

4. Volume control

The tester has three positions: LOW/MED/HIGH.

LOW is similar to a normal phone's level.

Acoustic shock protection works even in HIGH position.

5. Microphone

Talk here in 'TALK' mode, when not using the headset.

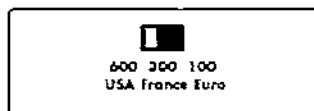
6. RJ11 lead socket

Pin 2: Ground; Pin 3: Tip; Pin 4: Ring

When Tip is positive with respect to Ring (normal polarity), the green LED illuminates.

Lightning: To specification ITU K.17, 20, 21 (1500 V).

Timed Break Recall Duration Switch located under Battery



Digital Services Protection (DSP)

OFF mode

In Europe most PSTN and PABX Analog telephone lines have a DC feed of between 24 and 66 volts.

The Digital Voltage alarm, a rapid clicking sound warns you if you are connected to a phone line which has more than 70 v.

If the alarm sounds you have probably connected to a line carrying a large DC voltage, to power some remote digital equipment. In most cases this will be an ISDN NT or pair gain remote unit. Do not attempt to go off hook but switch to monitor mode, you should hear the characteristic hiss of digital signalling. This will confirm that the line is not analog but digital. Now you know that extra care has to be taken with this line, breaking shorting or connecting a normal telephone to this line will result in disruption to the customers service.

High voltage off hook inhibit:

If you attempt to go into talk mode on a line that has a DC feed of more than 110v the tester will not loop the line.

As well as protecting ISDN and pair gain services from disruption, DSP protects the tester from damage due to it having to dissipate high power levels in talk mode. All DSP features work even if the battery is flat or not fitted.

Using your ACT/452 Test Set

Installing the battery

1. For safety reasons, the unit must always be disconnected from the line before the battery cover is removed.

2. Slide the main mode switch to 'OFF'.

3. Loosen the battery cover captive screw (Fig 1) and carefully prise open the cover using a screwdriver (Fig 2).

4. Connect a good 9V alkaline battery to the clip (Fig 3).

In 'OFF' mode no battery power is drawn.

5. Replace the cover ensuring that both tabs are located correctly (Fig 4). Finally, tighten the battery cover captive screw.

The 'flat battery - always ready' feature means calls can be made and answered even if no battery is fitted.

Connecting the Leadset

If not already fitted, plug in the RJ11 Connector and secure the strain relief mechanism.

Hi-Z Active Monitor mode (MON)

High impedance monitor mode allows the user to assess the state and traffic on the line by listening, without disrupting that traffic. Negligible loop current is drawn and AC impedance is high.

6. Slide the main mode switch to 'MON'. (If the unit is not connected to a powered line within 5 mins, it will automatically switch off.)

7. Attach the RED lead to 'B' leg and the BLACK lead to 'A' leg, using the alligator clips.

8. Listen. Traffic will be heard if it is present on the line. If a loud 50Hz/60Hz hum is heard, **beware!** - it may be Mains power. If hiss is heard, there could be digital traffic.

9. Press and hold the 'POL' button, observe the LEDs at the top of the keypad. An illuminated LED indicates that the voltage on the line is greater than 5V; RED indicates 'A' leg and 'B' leg may be reversed. If both LEDs illuminate, beware! - AC is present.

Red LED:
Tip/Ring: reversed
"A" / "B" reversed
Black/Tip: -ve
Red/Ring: +ve

Green LED:
Tip/Ring: normal
"A" / "B" normal
Black/Tip: +ve
Red/Ring: -ve



Talk mode

10. With the main mode switch in 'MON', check if the line is in use. If not, select the required dialling mode with the 'TONE/PULSE' switch, and then slide the main mode switch to 'TALK'.

11. Listen. When dial tone is heard, dial a number as you would on a conventional telephone.

*TIP: To temporarily switch from pulse to tone signalling press * key. This can be useful when using a PABX, charge-cards, voice mail, etc.*

12. The earpiece volume can be boosted above a normal phone's level with the volume slider.

13. It is possible to cut off transmission by muting the microphone. To do this, press and hold the 'MUTE' button.

14. To hang up, slide the main mode switch to 'OFF'.

Off mode (OFF)

15. The ringer will warble in 'OFF' mode when there is an incoming call.

16. To answer the call, slide the main mode switch to 'TALK'.

17. To hang up, slide the main mode switch to 'OFF'.

18. When not in use, ensure that the main mode switch is in the 'OFF' position.

TIP The main mode switch should be left in the 'OFF' position when the tester is not in use. In this position battery consumption is negligible. If the tester is not used for an extended period, it is advisable to remove the battery just in case it leaks and causes damage to the tester.



Meters Ltd