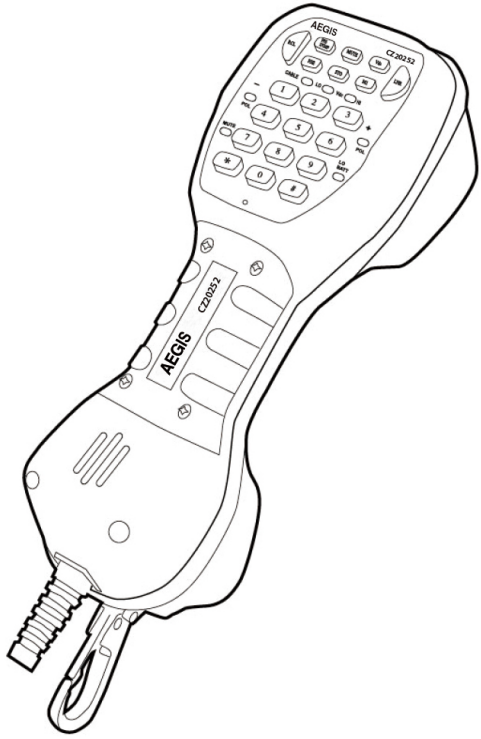
CZ20252
User Guide



IP54

CZ20252-ART01-01

Thank you for purchasing the CZ20252 TEST PHONE. Before using the CZ20252 for the first time, please read the following instructions.

Warning:

The CZ20252 Test Phone is a professional telecommunications tool, especially designed for checking telecommunications lines. It is not designed to be used on any other cabling systems, particularly mains powered systems with nominal voltages of AC100~125V 50/60Hz or AC200~250V 50/60Hz. Mains power will cause the risk of electric shock or product damage. You must ensure the telecommunication line the CZ20252 is being connected to is suitable and free from hazardous voltages before using the CZ20252.

Therefore, we recommend the user before using the CZ20252, on unknown line voltages set the test set to Vdc mode and verify the line voltage through the LO and HI indicator LED's .

Packing List

Before you begin using your CZ20252, please make sure you have received all components:

- Test Phone
- Line cord with Banana Plugs
- Crocodile Clips
- User's Manual
- Replacement fuse x 2

If any of these items are missing or damaged, contact your distributor or sales representative immediately.

Introduction

The Aegis CZ20252 Test Phone comes with all the functions you need to complete your job in the fastest most cost effective manner. Waterproof and dustproof to IP54 and its robust construction ensures it will withstand the rough and tumble of everyday use in the field.

The CZ20252 is an advanced Test Phone used by installers, linesmen, and repair technicians to test copper wire voice subscriber lines. It is easy to use, featuring two-way hands-free operation, speed dialling, last number recall, and voltage/continuity/polarity testing.

Features

1. IEC/EN 60529 IP54
2. Rugged construction for drop and knock proofing
3. Speakerphone for convenient two-way, hands-free conversation
4. High impedance monitor mode (DSL safe)
5. Direct dial number – hotkey (M1)
6. Last number redial
7. Store up to twelve 16-digit numbers (speed dialling)
8. Auto ‘off’ feature turns off speaker (3 mins) to save battery
9. LED indicators for voltage
10. LED indicator for polarity
11. LED indictor for low battery
12. Line continuity testing
13. Tone and pulse operation
14. PBX pause button.
15. Mute button
16. Electronic volume control
17. Audible electronic ringer
18. Relocatable steel locking belt clip
19. Banana plugs and crocodile clips – also suitable for use with Aegis QuickSwitch adaptors for Krone, Quante, 3M, Siemens, etc
20. RCM and CE approved

Physical Characteristics

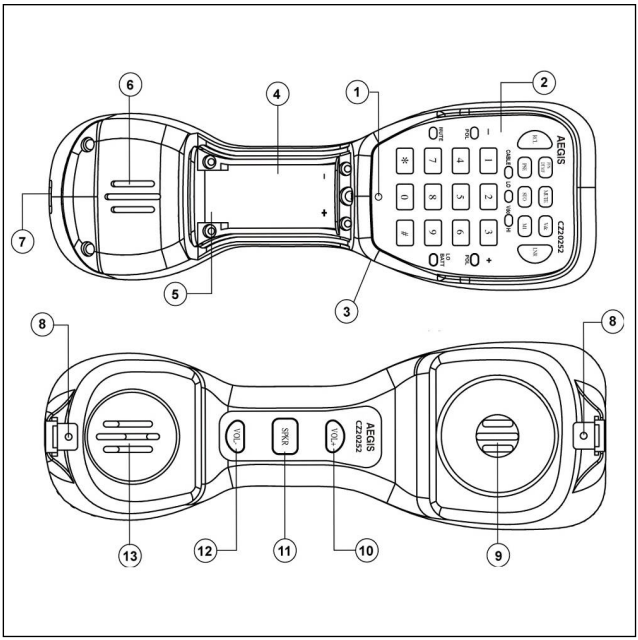


Fig.1 Physical Characteristics

1. Speakerphone microphone
2. Keypad
3. Talk/Monitor/VDC switch
4. Battery Compartment (9V battery)
5. Fuse (in battery compartment)
6. Speakerphone/Monitor amplified speaker
7. Line cord strain relief
8. Optional Belt Hook location (2 places)
9. Handset receiver
10. Increase volume button
11. Handset/Speakerphone button
12. Reduce volume button
13. Handset Microphone

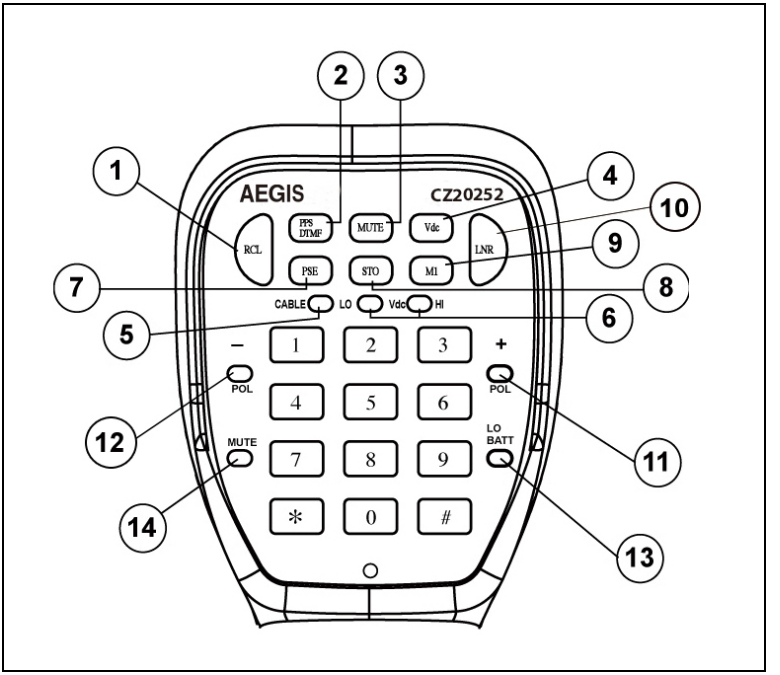


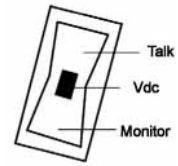
Fig.2 CZ20252 Keypad and Overlay

Keypad control and indicators:

1. RCL : Button - Recall
2. PPS/DTMF : Button - Tone/Pulse
3. MUTE : Button - Mute
4. Vdc : Button – VDC. Inspects the incoming ring voltage and tests the voltage of the line
5. CABLE : LED – Tests the telecommunication line's continuity. On a well-connected line the CABLE LED illuminates red
6. Vdc : LEDs - Voltage line level indicators
7. PSE : Button - PBX pause
8. STO : Button – Storage of speed dial numbers
9. M1 : Button – Direct dial number
10. LNR : Button - Last number redial
11. POL + : LED – Polarity positive
12. POL - : LED – Polarity negative
13. LO BATT : LED - Battery low
14. MUTE : LED – Mute. When lit, MUTE is on

Operation

Before Operation



1. Remove the battery hatch and install 9V battery in the battery compartment ensuring correct polarity.
2. Ensure the telecommunications line to be tested does not have a hazardous voltage present before connecting the Test phone.

Talk/Vdc/Monitor switch

The CZ20252 has three basic modes of operation: Vdc, Talk, and Monitor modes. The CZ20252 should always be connected in the Vdc position initially to monitor for any high voltages. If high voltages are indicated do not commence testing. Once the line is confirmed to be safe for a test connection always use Monitor mode to listen for any active services before switching to Talk mode to prevent disconnecting an active service.

Operating the CZ20252 in Vdc mode

Line voltage test

1. Set the function switch to “Vdc” position.
2. Connect the CZ20252 to the telecommunications line
3. Press Vdc button to measure the voltage.
4. Indication of the voltage level is shown by the Vdc LED indicators. If neither LED is lit the detected voltage is <24VDC. Otherwise the voltage range is indicated by a combination of the LED’s illuminates as shown in the following table:

DC voltage-indication list		
LED(LO)	Green than transitions to red	Higher than 24V
	Red	Higher than 100V
LED(HI)	Green than transitions to red	Higher than 120V
	Red	Higher than 200V

Caution:

1. The range of the voltage test must be lower than 250V and the function switch must be set to “Vdc” position; otherwise the fuse may be damaged.
2. An AC line voltage is converted into a DC voltage by the CZ20252 internal transformer.

Telecom Line Continuity test

To check for continuity on the telecommunication line, you can do so by the following steps:

1. Connect the two sides of the telecom line onto the crocodile clips on the lead plugs.
2. Set the function switch to “M” position.
3. Press Vdc button.

If the CABLE led illuminates, it means there is a good continuity on the telecommunication line. If the CABLE LED does not illuminate it indicates the telecommunication line does not have a good continuity.

Operating in Monitor Mode

The M (monitor) position provides a high impedance coupling to allow line monitoring without disrupting conversations or signalling. Set the function switch to “M” position and then press the SPKR button to listen onto the telecommunication line through the test telephone’s speaker. If there is an audible signal on the telecommunication line the signal will be amplified through the speaker. If there is no audible signal on the line, circuit noise will be amplified through the speaker. In monitor mode ensure the circuit connect test feature is turned off. Otherwise this will introduce some telecom line crosstalk and result in low sound.

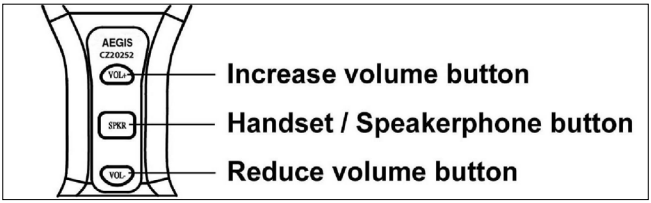
Operating in Talk Mode

The ‘T’ (Talk) position provides an off hook connection for dialling and talking as a common telephone.

Audio Controls Keys

The audio control keys (VOL + / SPKR / VOL -) let the operator switch

between the handset or speakerphone and control the volume of the audio output. The SPKR button turns the speakerphone on and off, providing two-way, hands-free conversation. The VOL+ and VOL- keys control the audible sound level.



Tone/Pulse button

The PPS/DTMF button toggles between pulse and tone dialling modes. Some older phone systems require pulse dialling whilst newer systems use tone dialling. Either mode is supported. When the CZ20252 is in tone dialling mode, pressing the PPS/DTMF button will switch it to pulse dialling mode. Pressing the button again will switch back to tone dialling.

Speed Dialling Numbers Storing

The STO button is used to store numbers in memory. There are 12 memory locations (keys 0 through 9, * and #), with each capable of storing up to 16 digits.

To store a number:

1. Set the function button to “T” position.
2. Dial the number to be stored
3. Press STO button
4. Press the key for the desired memory location.

The number will be stored on the selected key.

Dialling using Recall key

The RCL key is used to recall a number stored in memory. When connected to an active telecommunications line, select Talk mode to get a dial tone, and then press RCL and the key for the memory location of the number you wish to dial. The number will be automatically dialled.

To dial the stored number

1. Set the function button to “T” position

2. Press RCL button
3. Press the key for the memory location (keys 0 through 9, *and #)

Direct Dial

The M1 key provides direct dialling of one stored number. The number for the M1 key can be stored using the same process as for storing speed dial numbers, just select the M1 key to store the number to. When connected and dial tone is available, the CZ20252 will dial the number when the M1 key is pressed.

Last Number Redial

The LNR key redials the number most recently dialled. If you use LNR but the line is busy, switch the Talk mode to Vdc position to hang up and then switch back to Talk mode again, then press the LNR key to redial once again.

Pause

There are some cases where it may be necessary to insert a pause between digits of a stored number, such as when accessing a trunk through a PABX that requires a 9 to get an external line. To store a number with a pause, simply press the PSE button at the point where the pause is required. For example, 9'PSE'123456781212 would be used when 9 was required for an outside line and you wanted to store the number 12345678. The PSE button inserts a 4 second pause.

Mute function

The mute button in Talk mode will quieten the sound, which will remove environment background noise and assist the receiver to clearly hear the conversation.

Polarity Identification

The polarity LEDs automatically illuminate to show line polarity. For example, the right red POL+ LED will light when you connect the red test lead to ring (positive) side of the line and the black test lead is connected to the tip (negative) side of the line. The left red POL- LED will light if the test leads are reversed.

Battery

If the LO BATT LED lights, the battery needs to be changed. A low battery can lead to malfunction and incorrect readings.

Prolonging the CZ20252 battery life

There is no complete power off mode with the CZ20252. To maximise the battery life in the CZ20252, ensure the following recommendations are adhere to:

- Function switch set to the Vdc position when storing.
- Ensure the Mute LED is not illuminated when storing as the battery will be drained by the LED.
- Ensure the Mute button is off before storing the CZ20252 to avoid unnecessary battery drain.
- The speaker draws the most power than any other circuitry in the CZ20252. The battery life lasts longer if the speaker is used in moderation.

Note: The CZ20252 speakerphone function will automatically turn off after approximately three minutes if there has not been a signal greater than -30 dB in that period. Any signal greater than -30 dB resets the timer and keeps the speaker turned on.

Test Phone Trouble Shooting

1.If there is any crosstalk in use, generally it is interference from the telecom line so reduce the volume to reduce the interference. Alternately, it can be a poor connection to the line under test so check your connections.
2.If any abnormal situation is found while you are using the CZ20252 please follow your safety procedures before proceeding. If safe, test an alternate telecommunications line to identify the possible fault, referring to the trouble shooting list below.
3.If the CZ20252 still doesn't work after basic troubleshooting, please return the unit to an authorized service centre for investigation.

Defect Situation	Possible Problem	Solution
Dead, Doesn't work	Blown fuse	Replace fuse
No tone	Connection to telecommunications line is poor	Check connections to telecommunications line
Speakerphone doesn't work	MUTE function is on. Check MUTE LED indicator	Press the MUTE button and check if the MUTE LED is off
Short rings only	1. Low battery 2. The test phone is intermittently connected to a telecommunication line.	1. Change new battery 2. Confirm the test telephone is adequately connected to the right telecom line
Cannot hear the conversations in Monitor mode	1. The switch is not set to "M" position 2. The SPKR button is off 3. Low battery	1. Set the switch to "M" position 2. Press the VOL+ button to increase volume 3. Change a new battery
Crosstalk	1. Connection to telecommunications line is poor 2. Interference from the telecom line	1. Check connections to telecommunications line 2. Reduce the volume to reduce the interference
Stored numbers/Memory doesn't work	Low battery	Change new battery
Polarity LED doesn't work	Low battery	Change new battery
CABLE LED doesn't work	Low battery	Change new battery
LO HI(LED) doesn't work	Low battery	Change new battery
BATT(LED) doesn't work	Low battery	Change new battery

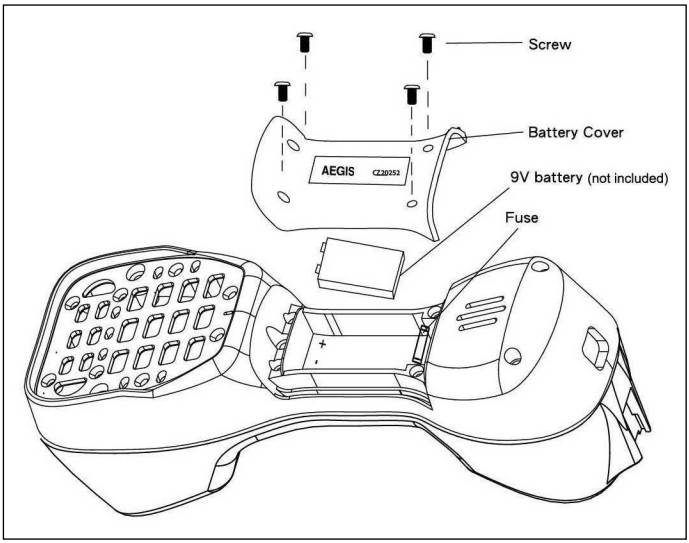


Fig.3 Fuse and battery replacement

Replacing the Battery

If the CZ20252 fails to operate properly, or stops working, replace the battery and retest. A 9V alkaline battery must be installed for the test set to operate. Do not use rechargeable batteries.

To replace the 9V battery:

1. Disconnect the CZ20252 from the line and place on a flat work surface with the battery cover up.
2. Use a screwdriver to remove the four screws from the battery compartment.
3. Remove the battery cover
4. Remove the old battery and properly discard.
5. Insert a new 9V battery observing the correct polarities.
6. Place the battery cover back and fasten the four screws securely.

Caution

Please exchange the battery as quickly as possible. After the battery is removed, the stored numbers in the memory will remain for 10 seconds only. If the memory is lost, you will need to re-enter your stored numbers as previously described.

Fuse replacement

If the test set still does not work after the battery is replaced, it may due to a blown fuse.

To replace the fuse:

1. Use a screwdriver to remove the four screws from the battery compartment.
2. Remove the battery cover
3. Remove the battery
4. Remove the old fuse
5. Insert a same specification (ø5xL20mm, 250mA/250V) of fuse
6. Place the battery and battery cover back, then fasten the four screws securely.

Maintenance

1. Disconnect clips from any metallic connections before performing any maintenance.
2. If the CZ20252 fails to operate properly, first replace the battery/fuse and retest before sending the test set in for repair. (see Battery Replacement and Fuse Replacement).
3. To clean, wipe carefully with a damp cloth. Ensure product is completely dry before use. Do not use chlorinated solvents on the test set.

Specification

ELECTRICAL	
Loop limit	2 KΩ maximum at 48 Vdc (nominal 20 mA minimum loop current)
DC resistance	
Talk Mode	300Ω typical
Monitor impedance	39kΩ nominal at 1 KHz
Rotary dial output	
Pulse rate	10pps+0.8pps
Percentage break	61%±2%
Inter-digit interval	1000 ms typical
Leakage during Break	>50 KΩ
DTMF output	
Tone frequency error	±1.2% maximum
Tone level	-8±2dBm combined (typical)
High/Low Tone Difference	4 dB maximum
Memory dialling	
Memory capacity	13, including M1, last number redialling
Digit capacity	16 digits per memory
PBX pause duration	4 seconds
Line Voltage Test	AC/DC voltage indication (under24 V、24~100V、101~150V、151~200V、> 200V)
Monitor amplifier power source	9V, providing 25 hours continuous use, typical
Automatic power shut off	After 3 minutes of no audio signal
Speaker phone levels	Electronic adjustable
Power source	battery (9V) 6F22 (not included)
PHYSICAL	
Measurement	230 ×82 × 89mm (9-1/16” × 3-15/64” × 3-1/2”)
Weight	635g typical
Water Resistance	Complies with IEC/EN 60529 IP54 Dustproof & Waterproof tests
Cord Sets	Banana Plugs with Crocodile Clips
ENVIRONMENTAL	
Temperature	Operating: 0 to 50°C / Storage: -10 to 60°C
Altitude	To 3,000m (10,000 ft) max
Relative humidity	5 To 95%
CERTIFICATE	IP54,RCM approved, CE approved

Aegis Proprietary Limited
www.aegis.net.au
sales@aegis.net.au