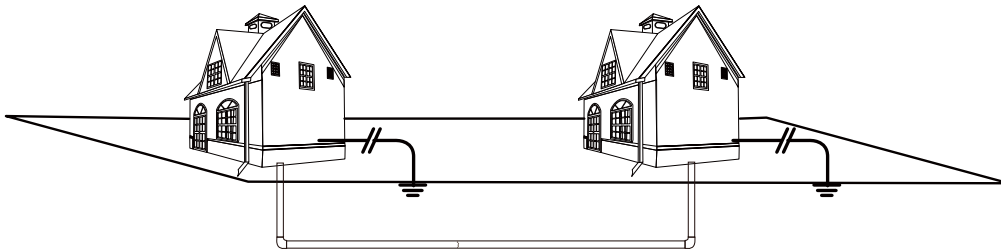


7.4.2 Using the A-frame in Fault Finding



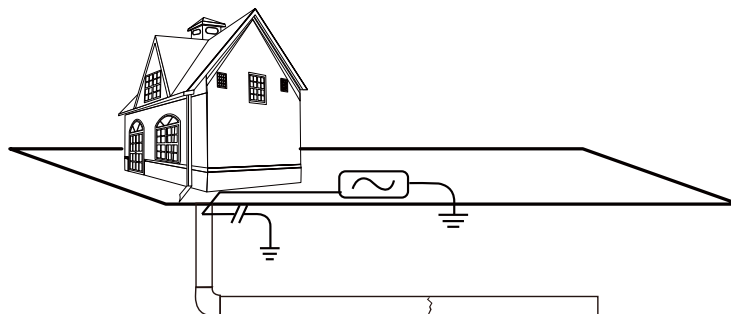
The A-frame accessory is used to detect ground faults on pipes and cables. In the case of pipes, the faults consist of coating defects. In the case of cables, faults are usually caused by insulation damage allowing the metallic sheath (or internal conductor) to become in contact with the ground.

To detect a damaged section, the line should be isolated and have all ground bonding removed. This will ensure that the ground fault is not masked by deliberate bonding to ground. The A-frame cannot distinguish between these two situations.



After isolating the line, use the vLocPro transmitter resistance measuring function, or a dedicated resistance measuring device to confirm that there is a fault to ground. The A-frame will typically detect faults up to 2 mega ohm and above (depending on the distance from transmitter, soil conditions etc).

Connect the transmitter to the target line using the red lead. An earth stake needs to be pushed into the ground and the black cable clipped to it. Try to place the earth stake as far as possible from the line to be evaluated. This ensures return currents do not distort the results. Switch on the transmitter and select either FF low or FF high. Use FF high if the line to be surveyed is long or the fault resistance is high.



7 Using the vLocPro

Plug in the A-frame to the receiver accessory socket. When the receiver is switched on, it will automatically default to the A-frame screen.

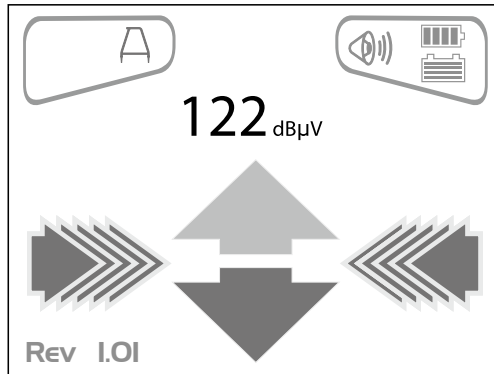
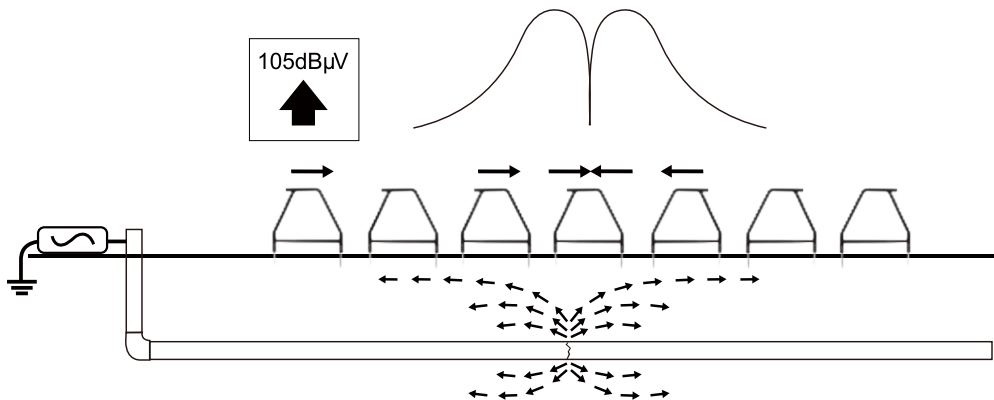


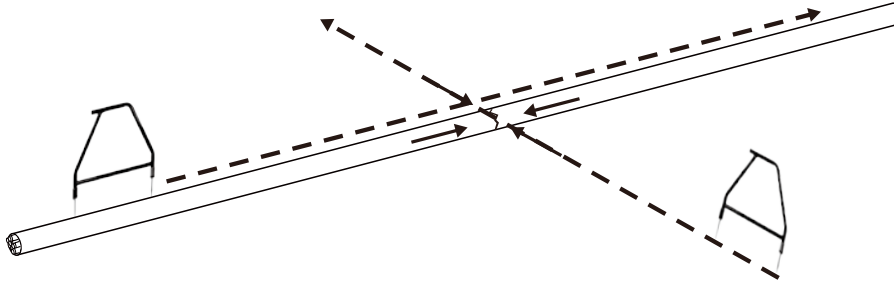
Image for reference only and may differ from actual image

Remove the plastic spike covers from the A-frame. Walk along the route of the line placing the spikes of the A-frame in the ground (with the green leg pointing away from the transmitter connection point) every two or three paces. If starting near the transmitter, the Arrow on the display will point away from the transmitter. As the distance from the transmitter increases, the dBuV reading will reduce and eventually the arrow will fluctuate or disappear all together. This is because the fault location is further along the line. If the left/right arrows are activated, use them to ensure the A-frame is positioned over the line and continue placing the A-frame in the ground every two or three paces. If the left/right arrows are not activated use the "Return" pushbutton to enter the locate screen allowing the user to confirm the position of the target line. Press the "Return" pushbutton again to re enter the A-frame mode.



7 Using the vLocPro

Eventually the A-frame will detect the fault signal and the "Fault Find" arrow will point forwards. Continue moving forwards, it may be worth reducing the distance between measurements points as the fault is neared. The dBuV reading will increase as the fault is neared. Maximum reading will be just before and just after the fault. When over the fault, the dBuV reading will drop and the arrow will flip backwards indicating that the position of the fault has been passed. Carefully place the A-frame before and after the fault to pinpoint the position. Repeating this across the line direction will pinpoint the fault laterally. Where the two lines cross is the fault position.



TIP



If it is suspected that there is just one fault. Insert the A-frame approximately one meter from the earth stake. Note the dBuV; this is approximately the maximum dBuV reading that will be measured over the fault.



WARNING

Always disconnect or isolate cables before making connections to conductors. Never attach the transmitter to live cables unless authorised. Use the appropriate accessories.

7.4.3 Using the Remote Antenna USB



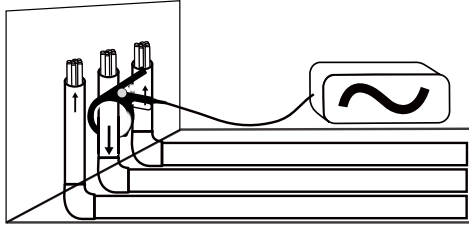
The remote stethoscope antenna can be used to help identify a particular cable on a cable tray or where cables are bunched together.

Methods:

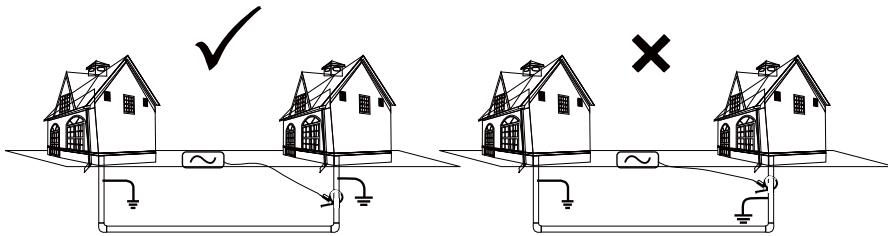
1. Connect a signal to the cable to be identified. The remote stethoscope functions has an operational frequency range of 512Hz up to 200kHz, but low frequencies should be a preference in this application as they are less likely to leak or bleed over to other cables.

7 Using the vLocPro

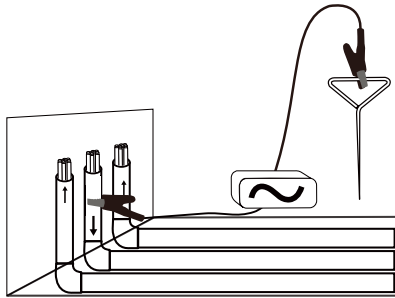
2. The best method of signal application when identifying cables is to use the signal clamp. This is because the signal clamp applies a signal to the target cable and shares an equal amount with other cross bonded cables.



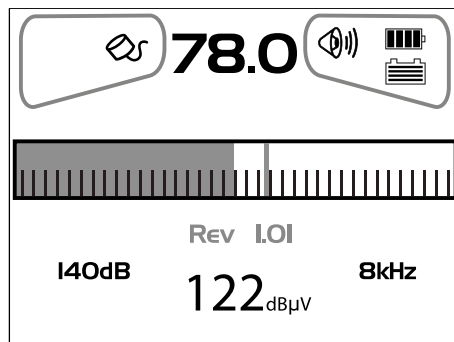
3. When using the signal clamp, both ends of the target cable should be grounded. Apply the clamp below the ground point. Applying the clamp above the ground point will prevent the signal finding the return path through the ground, so is not advised.



4. If this is not possible use a transmitter signal clamp use a direct connection lead to make an electrical connection to the cable. Removing any cross bonding between cables prevents the signal travelling along commonly bonded cables.

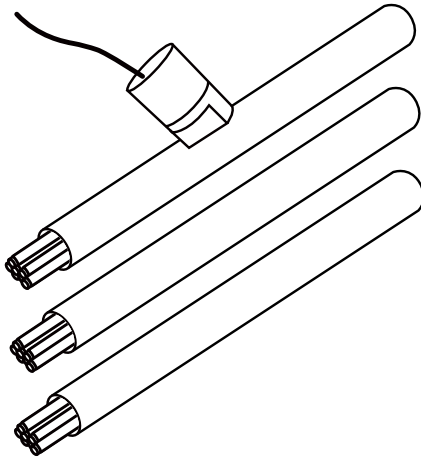


5. Do not use the Induction method as the signal will appear on all cables in the area of the transmitter.
6. Connect the remote stethoscope antenna to the accessory input of the Receiver. The correct settings and user interface will be automatically selected.



7 Using the vLocPro

7. Ensure the frequency selected on the vLoc is the same as selected on the transmitter.
8. Place the stethoscope on each of the suspected target cables with the flats of the antenna in line with the route of the cable.



9. Note the dB reading of each cable. The one with the largest reading is likely to be the target cable.
10. If necessary adjust the sensitivity of the vLoc so that the signal is within the operating section of the bar graph. This will help identify the cable if the signal levels are similar because of cross coupling of the signal.



WARNING

The remote stethoscope antenna is a useful tool to help identify cables. However, it should not be used as positive identification before an unused cable is cut. Always follow company procedures when cutting disused or isolated cables.



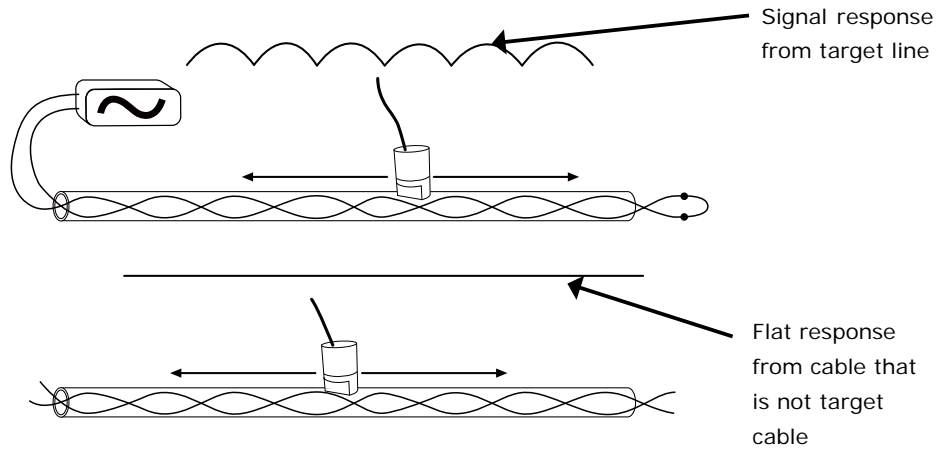
TIP

The remote antenna USB stethoscope can be used to identify disused and isolated cables. This process can be further enhanced if the cable is isolated and is of a twisted cable construction.

7 Using the vLocPro

Methods:

1. Connect the transmitter to two of the cores of the cable. At the far end short together these two conductors making a loop.
2. Set the transmitter to a low frequency such as 640Hz and set the output to maximum.



3. At the point of interest, run the remote stethoscope antenna along the suspected target cable. If the correct cable is being assessed the signal will increase and decrease in sympathy with the twist of the two conductors within the cable.
4. If the signal is a steady level and does not rise and fall, this is probably NOT the target cable.



Warning:

The remote stethoscope antenna is a useful tool to help identify cables. However, it should not be used as positive identification before an unused cable is cut. Always follow company procedures when cutting disused or isolated cables.

Accessories & Options

8.1 A-frame

The A-frame accessory is used to detect ground faults on pipes and cables. In the case of pipes, the faults consist of coating defects. In the case of cables, faults are usually caused by insulation damage allowing the metallic sheath (or internal conductor) to become in contact with the ground.



8.2 Remote Antenna

The remote antenna can be used to help identify a particular cable on a cable tray or where cables are bunched together.



8.3 Loc-10Tx-Power Lead

- 12V DC, 30ft (10m) lead to power (NOT charge lead) the transmitter from a vehicle.



If it is intended to apply the transmitter to a target line at high output levels and long periods, it may be useful to power the transmitter using the 12V DC vehicle power lead. To power the transmitter from the 12V DC vehicle power lead, connect the lead to the 12V input positioned on the side of the transmitter. Plug the cigarette lighter plug into the vehicle cigarette lighter socket (be sure that the socket is live. Some vehicles only activate the cigarette lighter when the vehicle is running).

It is not necessary to disconnect or remove the standard batteries as the unit will automatically select the external 12V DC supply

8.4 Loc-10Tx - AC Waterproof Power Supply

- 12V DC, 30ft (10m) lead to power (NOT charge lead) the transmitter from a vehicle.



8.5 LPC Separation Filter

The LPC separation filter (LPC) is used to safely inject a trace tone to a live cable via a domestic mains socket, so that the cable can be traced from the premises to the connection in the street. It is suitable for connecting to voltages between 100V AC and 250V AC.



8.6 Charging Lead

- 12ft (4m) long lead to charge the receiver's battery (or Aux battery pack) while on the move.



It is preferable to connect the charger to a cigarette lighter socket that is permanently live. However, do not leave connected to the receiver for excessively long periods.