CD1000 CABLE DETECTOR

INSTRUCTION MANUAL

MARTINDALE ELECTRIC

⚠

GENERAL SAFETY INFORMATION: Always read before proceeding.

Warning
These instructions contain both information and warnings that are necessary for the safe operation and maintenance of this product. It is recommended that you read the instructions carefully and ensure that the contents are fully understood. Failure to understand and to comply with the warnings and instructions can result in serious injury, damage or even death.

In order to avoid the danger of electrical shock, it is important that proper safety measures are taken when working with voltages exceeding 30V AC rms, 42V AC peak or 60V DC.

This product must only be used by a competent person capable of interpreting the results under the conditions and for the purposes for which it has been constructed. Particular attention should be paid to the Warnings, Precautions and Technical Specifications. Always check the unit is in good working order before use and that there are no signs of damage to it. Do not use if damaged.

Where applicable other safety measures such as use of protective gloves, goggles etc. should be employed.

Please keep these instructions for future reference. Updated instructions and product information are available at: www.martindale-electric.co.uk

REMEMBER: SAFETY IS NO ACCIDENT

MEANING OF SYMBOLS:

CE **Equipment complies with relevant EU Directives**

End of life disposal of this equipment should be in accordance with relevant EU Directives

Caution - risk of electric shock

Caution - risk of danger & refer to instructions

Equipment protected by double or reinforced insulation (Class II)

Thank you for buying one of our products. For safety and full understanding of its benefits please read this manual before use. Technical support is available from 01923 441717 and support@martindale-electric.co.uk.

CONTENTS

1. INTRODUCTION

1.1 Inspection

Examine the shipping carton for any sign of damage. Inspect the unit and any accessories for damage. If there is any damage then consult your distributor immediately.

1.2 Description

If you are drilling a hole in a wall, a floor or are excavating a road etc. you will need to know the layout of electricity cables, water or gas pipes etc. One method would be to refer to constructional drawings, but if these are not available or are not accurate, another means will be required to find cables and pipes. Failure to do so could result in serious injury or death if electric cables or gas pipes are drilled through.

With the CD1000 cable locator electricity cables and pipes can easily be located.

The CD1000 is an easy to use, portable instrument, consisting of a transmitter, a receiver and numerous accessories.

Using advanced digital circuit technology the transmitter sends to the target cable (or metal pipe) an AC voltage modulated by digital signals, which generate an alternating electric field. The alternating electric field is detected by the receiver sensor head, magnified and decoded. By localising the maximum signal strength detected, the path of a cable or metal pipe can be traced, a fuse can be found, a break in a conductor can be found, etc.

The transmitter can also be used as an AC/DC voltmeter and the receiver can be used as a non-contact voltage indicator.

The CD1000 is a useful tool for those involved in the construction of telecommunications cables, power cables, building pipes etc. as well as the maintenance of such cables and pipes.

The CD1000 Transmitter has the following functions:

- Easily changeable transmission code. This allows multiple units to be used on the same site.
- LED torch.
- Mute function.
- Battery low indication.
- Self-Test function.

The CD1000 Receiver has the following functions:

- LED torch.
- Display backlight.
- Mute function.
- Battery low indication for receiver and transmitter.
- Auto power off.
- Manual or Auto sensitivity.

1.3 Accessories (included)

- Bag.
- TL47 test leads (with crocodile clips).
- Earthing rod.
- 9V Alkaline battery.
- 1.5V Alkaline battery x6.
- Instructions.

Accessories not included:

SB13 Safebreak Socket Test Adaptor (Order code MARSB13) – allows convenient connection of the transmitter to wall sockets.

Extra transmitter units - allows faster identification of multiple cables and more accurate fault finding.

1.4 Battery Installation

Refer to Section 4.1 (Battery Replacement) for the battery installation instructions for the CD1000 transmitter and receiver.

2. PRODUCT SPECIFIC SAFETY INFORMATION

Measurement Category III (CAT III) is applicable to test and measuring equipment connected to the distribution part of the building's low-voltage MAINS installation.

2.1 Precautions

This product has been designed with your safety in mind, but please pay attention to the following warnings and cautions before use.

⚠ Warning

Before use check the unit for cracks or any other damage. Make sure the unit is free from dust, grease and moisture. Also check any associated leads and accessories for damage. Do not use if damaged.

⚠ Warning

Always test these units on an appropriate proving device or known voltage source before using them to determine if a hazardous voltage exists in a circuit to be tested.

⚠ Warning

Many of the applications of the CD1000 require that the circuits being tested are dead. Take all necessary safety precautions when proving a circuit is not hazardous live.

⚠ Warning

Do not use either unit if the battery cover is not fitted.

⚠ Warning

When the transmitter is used in combination with test leads, the measurement category of the combination is the lower measurement category of either this unit or the test leads used. Likewise, if test lead accessories such as crocodile clips are also used, the measurement category will be the lowest measurement category in that combination.

⚠ Warning

When using test leads / crocodile clips, always keep your fingers behind the finger guard on the test lead probe or crocodile clip.

⚠ Warning

Connecting the transmitter to live wiring beyond the specified input voltage limits of the unit may damage the unit and expose the operator to a shock hazard. Always check the unit's specified limits before use.

⚠ Caution

Remove the batteries when not in use for an extended period, to avoid corrosion from leaking batteries.

⚠ Caution

Avoid severe mechanical shock or vibration and extreme temperature.

3. OPERATION

3.1 General
There are two basic methods for using the CD1000:

One-pole application
The transmitter is connected to one conductor and a suitable earth. Due to the high frequency signal generated by the transmitter a single conductor can be located and traced. The high frequency signal on the conductor is transmitted to earth in a similar way to a radio receiver.

The circuit being tested **must not be live** for these applications.

These applications are described in sections 3.19 a) to h).

Dual-pole application
Dead circuits:
Both transmitter leads are connected to the conductor to be tested to form a closed circuit or loop so the signal returns back to the transmitter. Alternatively the transmitter can be connected to two separate parallel conductors and the furthest ends joined to form a loop.

The circuit being tested **must not be live** for these applications.

These applications are described in sections 3.20 c) to e).

Live mains:
The transmitter leads are connected to the phase and neutral conductors of a mains circuit to be tested. Where there is no load on the circuit the closed circuit or loop will be formed by coupling of the distributed capacitance of the cable being tested.

The circuit being tested **may be live** for these applications.

These applications are described in sections 3.20 a) & b).

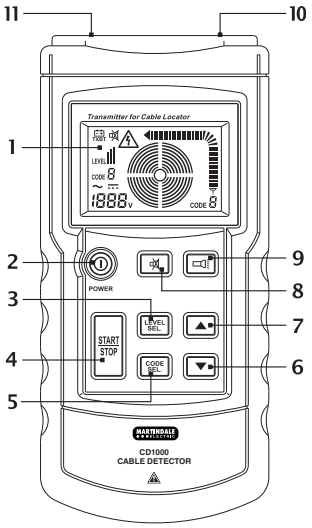
3.2 Low Battery Indication
If the transmitter battery is low the TXBT symbol will flash on the transmitter LCD and the buzzer will beep every 5 seconds. The TXBT symbol will also be displayed on the receiver LCD when the receiver is receiving a signal from the transmitter.

If the receiver battery is low the RXBT symbol will flash on the receiver LCD and the buzzer will beep every 5 seconds.

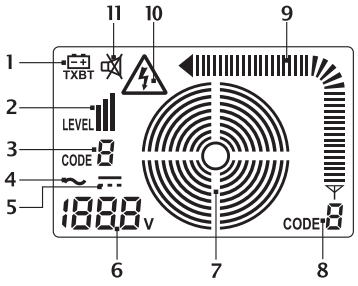
Refer to section 4.1 (battery replacement) for battery replacement instructions for the CD1000 transmitter and receiver.

3.3 Self-Test Function
The transmitter has a self-test function. A self-test failure will be displayed on the LCD.

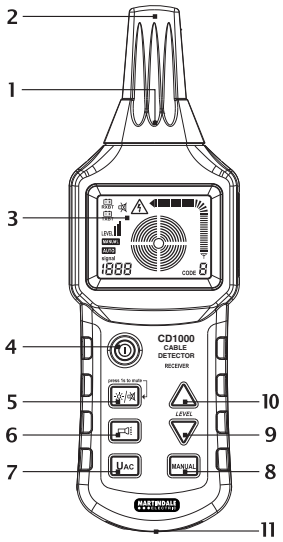
3.4 Description of Transmitter
1 LCD.
2 POWER on/off key.
3 Transmitter output POWER LEVEL setting key (Sets levels I , II or III).
4 Code transmit START/STOP key.
5 CODE setting key. Press for 1 second to enter code setting function and press again to exit. Used in conjunction with UP and DOWN keys. Codes F, E, H, D, L, C, O or A can be selected (Default is F).
6 DOWN key for setting power level and code.
7 UP key for setting power level and code.
8 MUTE key. Turns off/on keypad tone.
9 TORCH on/off key.
10 + terminal.
11 Earth terminal.



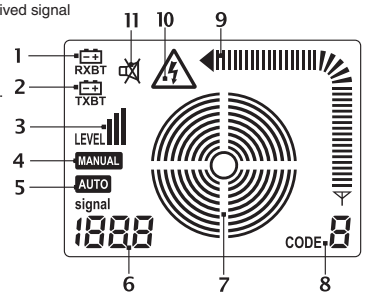
3.5 Description of Transmitter Display
1 Battery level (flashes when low).
2 Transmitter power level (Indicates levels I , II or III).
3 Selected transmitter code.
4 Indicates AC voltage being measured.
5 Indicates DC voltage being measured.
6 Measured value of voltage.
7 Indicates signal is being transmitted.
8 Code being transmitted.
9 Indicates transmitted signal level.
10 Indicates voltage ≥12 AC/DC present at terminals.
11 Indicates mute is selected.



3.6 Description of Receiver
1 Torch.
2 Probe head.
3 LCD.
4 POWER on/off key.
5 BACKLIGHT/MUTE key.
6 TORCH on/off key.
7 UAC key. Switches from cable locating mode to mains voltage detection.
8 MANUAL key. Switches between manual and automatic sensitivity functions.
9 Manual SENSITIVITY decrease key.
10 Manual SENSITIVITY increase key.
11 Loudspeaker.



3.7 Description of Receiver Display
1 Receiver battery level (flashes when low).
2 Transmitter battery level (flashes when low).
3 Transmitter power level setting.
4 Indicates manual sensitivity mode selected.
5 Indicates automatic sensitivity mode selected.
6 Displays received signal intensity as a numerical value.
Displays 'SEL' in manual mode if no signal is received.
Displays 'UAC' in the UAC mode.
7 Graphical indication of sensitivity setting. More concentric circles indicates a higher sensitivity setting.
8 Indicates the code being received
9 Graphical indication of the received signal intensity.
10 Indicates voltage present on wiring under test.
11 Indicates loudspeaker is muted.



3.8 Voltmeter Function of the Transmitter
If the transmitter is connected to a live circuit ≥12V AC or DC, the voltage of the live circuit will be measured. The voltage and the AC or DC symbol will be displayed on the transmitter LCD. See section 3.5, **6**.

The ⚠ symbol will also be displayed on the transmitter LCD when a voltage ≥12V AC or DC is measured.

3.9 Torch
A torch is fitted on the transmitter and receiver. Press the key on the transmitter and the key on the receiver to turn on the torch. Press again to turn it off.

3.10 Backlight
Press key on the receiver to turn on the backlight. Press again to turn it off. The transmitter does not have a backlight.

3.11 Mute Function
To turn off the buzzer on the transmitter press the mute key. Press again to turn it back on.

To turn off the buzzer on the receiver press the backlight/mute key for 1 second or more. Press again for 1 second or more to turn it back on.

3.12 Auto Power Off
If the keypad of the receiver is inactive for a period of approximately 10 minutes the receiver will automatically power off. Press the receiver power ON/OFF key to turn the unit back on.
The transmitter does not have an auto power off function.

3.13 Transmitter Code Selection
The transmitter defaults to code 'F' at power on.

Press CODE SEL. key for at least 1 second.(CODE on LCD flashes).
Press △ ▽ keys to set new code.
Press CODE SEL. to exit. (CODE on LCD stops flashing).

3.14 Setting the Transmitter Output Level

Defaults to power level I at power on.

Press LEVEL SEL. key for at least 1 second. (LEVEL on LCD flashes).

Press △ ▽ keys to set new level. **I** , **II** or **III** will be displayed on the transmitter LCD and also on the receiver LCD when the receiver is receiving a signal from the transmitter.

Press LEVEL SEL. to exit. (LEVEL on LCD stops flashing).

3.15 Start/Stop Key

Press the START STOP key to transmit a signal. Press again to stop.

During transmission increasing concentric circles will be displayed and the output level of the code being transmitted will also be displayed in graphical form.
When a signal is being transmitted, the transmitter code and output level cannot be changed.

3.16 Receiver Auto Sensitivity

The receiver defaults to the auto sensitivity mode at power up. AUTO is displayed on the LCD.

3.17 Manually Setting Receiver Sensitivity

Press MANUAL key. MANUAL is displayed on the LCD.

Press △ ▽ keys to set a new sensitivity. The LCD will display increasing concentric circles for a higher sensitivity setting.

Press MANUAL key to exit and return to the auto sensitivity mode.

3.18 UAC Function

Press UAC key to select the UAC function. **UAC** is displayed on the LCD.

3.19 Testing Considerations

The following considerations should be observed when using the CD1000:

- To avoid tripping an RCD that may be in a circuit being tested when the transmitter is used in a dual-pole live mains application, connect the transmitter ⏚ socket to the neutral conductor rather than the earth conductor. The earth leakage current of the mains circuit combined with the current drawn by the transmitter to earth may be enough to trip the RCD.
- For any application the connections of the transmitter should form a closed circuit or loop.
- When connecting the transmitter for one-pole applications, the auxiliary earth used must be of a good quality.
- The cable locator may not function correctly in the vicinity of strong electromagnetic fields.

3.20 One Pole Applications

Suitable for:
Finding line interruptions in walls and floors;

Finding and tracing wiring, sockets, junction boxes, switches, etc. for building installations;

Finding bottlenecks, kinking, buckling and obstructions in installation pipes by means of an inserted metal wire.

⚠ In all the following applications of section 3.20 a) to h) the conductor or circuit being tested **MUST NOT BE LIVE**.

⚠ Ensure the transmitter earth socket is connected to a good quality earth for all the following applications.

The tracing depth depends on the medium and the application. A typical tracing depth is 0 to 2m.

The protective conductor of an electrical outlet can be used as the earthing connection of the transmitter.

a) Locating Line Interruptions

The circuit under test **must not be live**.

Referring to figure 1, connect all conductors not being tested to an auxiliary earth.

Referring to figure 1, connect the ⏚ socket of the transmitter to the auxiliary earth, and connect the **+** socket of the transmitter to the wire to be tested using the test leads provided.

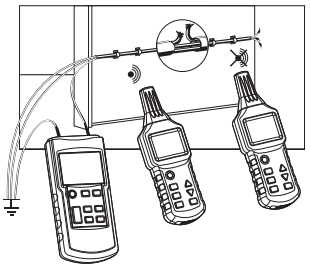


Figure 1

Press the power key ⏻ to turn on the transmitter. The unit will display the LEVEL and CODE default settings of **I** and **F**. (See section 3.5, **2** and **3**).
Referring to section 3.14 set the transmitter output level to the required level.

If the transmitting code needs to be changed then refer to section 3.13.

Referring to section 3.15 press the START STOP key to start transmitting the signal.

Press the power key ⏻ to turn on the receiver. The unit will default to the AUTO sensitivity mode and AUTO and 4 concentric circles will be displayed. (See section 3.7, **5** and **7**).

Move the receiver to the point where the transmitter connects to the wire being tested.

Referring to section 3.7 the receiver will display the transmitted power level **3**, the transmitted code **8**, the received signal intensity as a numerical value **6** and a graphical indication of the received signal intensity **9** .

Signal intensity will also be indicated by a change in the tone of the loudspeaker.

Slowly move the receiver along the route of the wire being tested until there is a significant drop in displayed signal intensity. This will indicate the general area of the break or interruption.

To find a more exact position of the break press the MANUAL key to set the receiver to the manual sensitivity mode. The receiver will default to the lowest sensitivity setting.

Adjust the △ key until the received signal intensity display **6** changes from SEL to a numerical value. The number of concentric circles will increase.

While positioning the receiver for the maximum displayed signal intensity

gradually lower the receiver sensitivity using the ▽ key until the break can be localised to a more exact position.

Note 1: The resistance of the interruption/break must be greater than 100 kΩ.

Note 2: The remaining wires in a multi-core cable should be earthed to avoid cross-coupling of the fed signals by a capacitive effect to the source terminals.

Note 3: The transmitter earth connection can be an auxiliary earth, earth from an earthed socket or a water pipe which is properly earthed.

b) Locating and Tracing Wiring and Sockets

The circuit under test **must not be live**.

The neutral and protective earth conductors must be connected and fully operational.

Referring to figure 2 connect the ⏚ socket of the transmitter to the protective earth

wire, and connect the **+** socket of the transmitter to the phase conductor to be tested using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

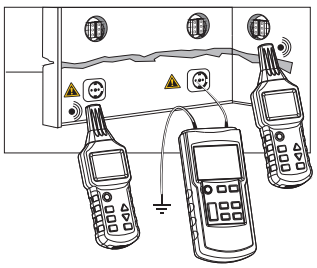


Figure 2

Note: Lateral branches of the circuit will also be detected. Remove the appropriate fuses to avoid this.

c) Locating Line Interruptions using Two Transmitters

When locating a line interruption using one transmitter to feed from one end of a conductor, the location of the interruption may not be precisely located in the presence of field disturbances. This problem can be overcome by the use of a second transmitter set to a different code to the first.

The circuit under test **must not be live**.

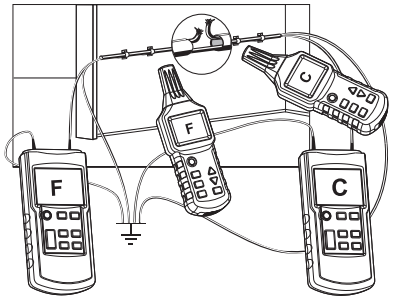
Referring to figure 3 connect all conductors not being tested to an auxiliary earth.

Referring to figure 3 connect the ⏚ socket of both transmitters to the auxiliary earth, and connect the **+** sockets of the transmitters to either end of the conductor to be tested, using the test leads provided.

Operate the transmitters and receiver as described in section 3.20 a).

If the transmitters codes are set as in figure 3 then the receiver will detect code F on one side of the break and code C on the other. Directly above the break no code will be displayed.

Figure 3



Note 1: The resistance of the interruption/break must be greater than 100 kΩ.

Note 2: The remaining wires in a multi-core cable should be earthed to avoid cross-coupling of the fed signals by a capacitive effect to the source terminals.

Note 3: The transmitter earth connection can be an auxiliary earth, earth from an earthed socket or a water pipe which is properly earthed.

d) Fault Detection in Electrical Floor Heating
The circuit under test **must not be live**.

Connect all conductors not being tested to an auxiliary earth.

Referring to figure 4a connect the ⏚ socket of the transmitter to the auxiliary earth, and connect the **+** socket of the transmitter to the conductor to be tested using the test leads provided.

If the two transmitter method is to be used then connect the transmitters as in figure 4b.

Operate the transmitter/s and receiver as described in section 3.20 a).

Note 1: If a shield mat is located above the heating wires, no earth connection may exist. If required, disconnect the shield from the earth connection.

Note 2: Full earthing should be ensured. There should be considerable distance between the earthing terminal of the transmitter and the target line. If this distance is too short the signal and line cannot be precisely located.

Figure 4a

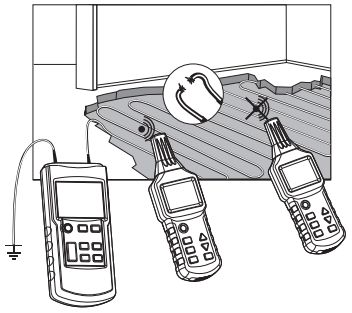
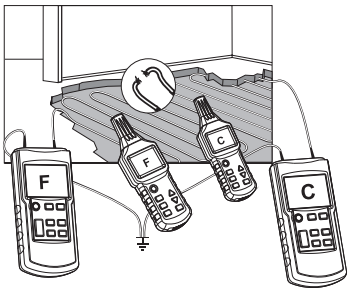


Figure 4b



e) Detecting a Restriction or Blockage in a Non-Metallic Pipe
The pipe under test **must not be live**.

The pipe must be made of non-conductive material (e.g. plastic).

Referring to figure 5 connect the ⏚ socket of the transmitter to the auxiliary earth, and connect the **+** socket of the transmitter to a metal helical tube (metal tube or flexible conduit may also be used) using the test leads provided.

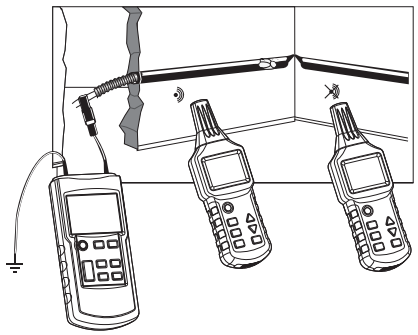
Push the metal tubing into the pipe up to the blockage or restriction.

Operate the transmitter and receiver as described in section 3.20 a).

Note 1: If there is live wiring in the pipe the power must be cut off and the wiring earthed.

Note 2: Full earthing should be ensured. There should be considerable distance between the earthing terminal of the transmitter and the target line. If this distance is too short the signal and line cannot be precisely located.

Figure 5



f) Detecting Metal Water and Heating Pipes
The electrical distribution system **must be turned off.**

The pipe to be detected should not be earthed. There should be a relatively high resistance between the pipe and earth otherwise the detection distance will be very short.

Referring to figures 6a and 6b, connect the ⏚ socket of the transmitter to an auxiliary earth, and connect **+** the socket of the transmitter to the metal piping using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

Figure 6a

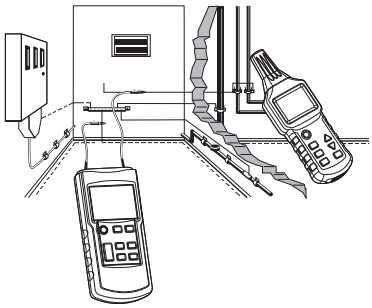
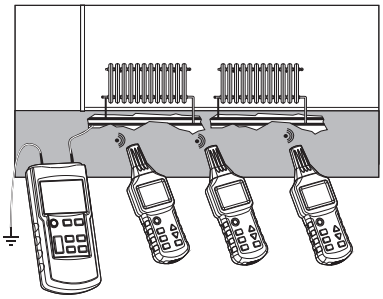


Figure 6b



Note 1: Full earthing should be ensured. There should be considerable distance between the earthing terminal of the transmitter and the target line. If this distance is too short the signal and line cannot be precisely located.

g) Detecting Power Circuits on the Same Floor

⚠ The electrical distribution system for the building **must be turned off**.

Disconnect the neutral conductor in the distribution box of this floor from the neutral conductors of other floors.

Referring to figure 7 connect the ⏚ socket of the transmitter to an auxiliary earth, and connect the **+** socket of the transmitter to the conductor to be tested using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

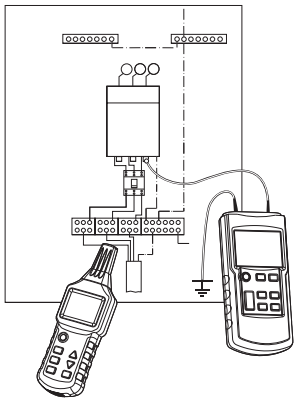


Figure 7

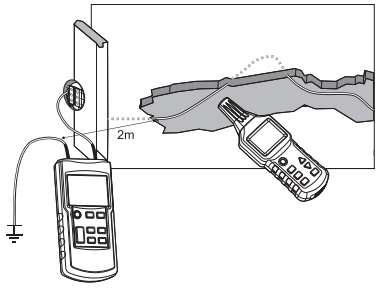
Note: Full earthing should be ensured. There should be considerable distance between the earthing terminal of the transmitter and the target line. If this distance is too short the signal and line cannot be precisely located.

h) Tracking an Underground Circuit
The circuit under test **must not be live**.

Referring to figure 8 connect the ⏚ socket of the transmitter to the auxiliary earth, and connect the **+** socket of the transmitter to the conductor to be tested using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

Figure 8



Note: Full earthing should be ensured. There should be considerable distance between the earthing terminal of the transmitter and the target line. If this distance is too short the signal and line cannot be precisely located.

3.21 Dual Pole Applications
Applications 3.21 a) & b) are suitable for live circuits.

⚠ Take all necessary safety precautions when connecting the transmitter test leads to the circuit being traced.
⚠ In the applications of section 3.21 c) to e) the conductor or circuit being tested **MUST NOT BE LIVE**.

When working on live circuits the transmitter will measure and display the voltage value of the circuit being tested. See section 3.5, **6**.

The receiver will also indicate the presence of a live circuit by displaying ⚠. See section 3.6, **10** and section 3.8.

a) Locating and Tracing Live Circuits

Referring to figure 9, connect the ⏚ socket of the transmitter to the neutral conductor and the **+** socket of the transmitter to the phase conductor of the circuit to be located or traced, using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

Note 1: This application can also be applied to dead circuits.
Note 2: Connections to wall sockets can be made easily with a Martindale SB13 Safebreak Socket Test Adaptor (Order code MARSB13).

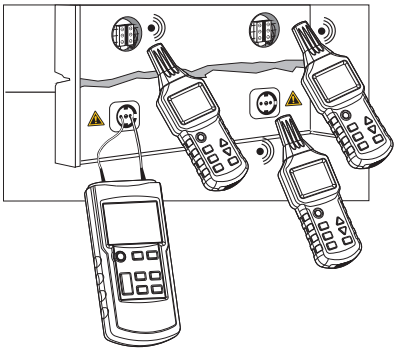


Figure 9

b) Searching for Fuses in Live Circuits
Referring to figure 10, connect the ⏚ socket of the transmitter to the neutral conductor, and connect the **+** socket of the transmitter to the phase conductor to be tested using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

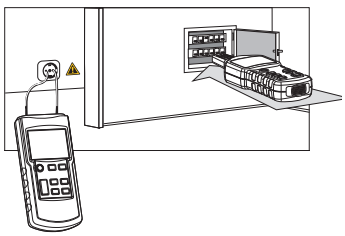


Figure 10

Note 1: The identification of fuses can be influenced by wiring positioning in the distribution box, so where possible dismantle the cover of the distribution box to search for the feed wire of the fuse.
Note 2: Due to coupling the signal may be detected on other fuses. Those signals will be weaker than the signal on the target fuse. Manually decrease the receiver sensitivity to isolate to only one fuse. Adjust the transmitter power if necessary.

c) Locating Short Circuits in Wiring
If the fuses or trips for the faulty circuit are still active the power for that circuit **MUST BE TURNED OFF.**

Referring to figure 11, connect the ⏚ socket of the transmitter to the neutral or earth conductors, and connect the **+** socket of the transmitter to the phase conductor to be tested using the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

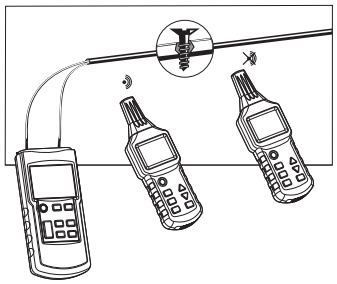


Figure 11

Note: Generally only short circuits with an impedance < 20Ω can be correctly detected. If the impedance is > 20Ω try the method of section 3.20 a).

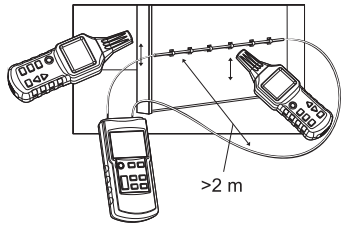
d) Detecting Relatively Deep Laid Wiring
In dual-pole applications, if the closed circuit is made of core wires in cables with multiple core wires the depth of detection will be greatly limited. This is because the feed line and loop or return line create a seriously distorted magnetic field. If a separate loop line is used this problem is avoided. The loop line may be any conducting wire or cable reel. Referring to figure 12, the important factor is for the loop wire to be positioned more than the depth of the cable being detected away. A common distance is > 2m.

The circuit under test **must not be live**.

Referring to figure 8, connect the ⏚ socket of the transmitter to one end of the conductor to be traced via a suitable lead or cable reel, and connect the **+** socket of the transmitter to the conductor to be tested using one of the test leads provided.

Operate the transmitter and receiver as described in section 3.20 a).

Figure 12



e) Determining and Sorting Installed Wiring
The circuit under test **must not be live**.

Referring to figure 13, connect the ⏚ socket and **+** socket of the transmitter to the conductors to be tested using the test leads provided.

The ends of the conductors in individual cables to be sorted must be twisted together to make electrical contact.

A single transmitter or multiple transmitters set to different codes can be used.

If a single transmitter is used change the connections to the cable to be sorted as required.

Operate the transmitter/s and receiver as described in section 3.20 a).

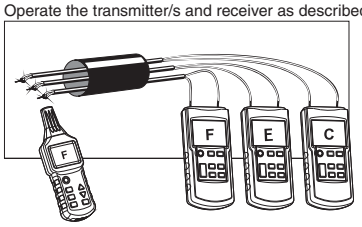
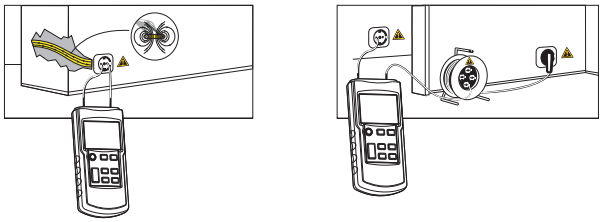


Figure 13

3.22 Increasing the Effective Radius to Detect Live Circuits
When the transmitter is directly connected to the phase and neutral conductors, the signals are conducted on two parallel circuits as shown in figure 14a. The twisted conductors may cause the signals to counteract each other leading to an effective detection radius of no more than 0.5m.

To overcome this effect connect the transmitter as shown in figure 14b where the loop line uses a separate cable, such as the cable reel shown, to increase the effective radius to over 2.5m.

Figure 14 a and 14b



3.23 Identifying Mains Voltage and Finding Circuit Breaks
The circuit under test must be live.

The transmitter is not required for this application unless a precise measurement of voltage is required.

Press the [UAC] key to select the UAC function. **UAC** is displayed on the LCD.

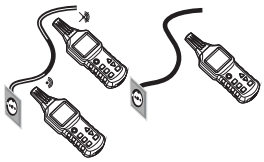
Referring to section 3.7, **9**, when the receiver is in close proximity to a live circuit the voltage level will be displayed in graphical form.

Signal intensity will also be indicated by a change in the tone of the loudspeaker.

Referring to figure 15, a circuit break will be indicated when the audible tone ceases or the graphical display is no longer present.

Note: When searching for the ends of multiple power lines, it is necessary to connect each line to the phase separately.

Figure 15



4. MAINTENANCE

4.1 Battery Replacement

⚠ To avoid shock or injury, disconnect the multimeter from any external circuits or components and remove the test leads before proceeding.

⚠ When replacing batteries always ensure correct polarity. If the polarity of the battery is incorrect the unit may be damaged.

Transmitter:
The battery compartment is underneath the unit beneath the stand. Lift the stand and undo the single screw securing the battery cover. Lift off the battery cover.
Fit a new standard 9V alkaline battery (PP3, NEDA 1604, or equivalent) observing correct polarity.

Replace the battery cover and screw.

Receiver:
The battery compartment is underneath the unit. Undo the single screw securing the battery cover. Lift off the battery cover.
Fit 6 new 1.5V alkaline batteries (AAA/LR03, or equivalent) observing correct polarity.

Replace the battery cover and screw.

Note: Do not mix old and new batteries.

4.2 Checking the Transmitter Internal Fuse

⚠ To avoid shock, injury or damage to the transmitter, disconnect it from any external circuits or components before proceeding.

Press the power key ⏻ to turn on the transmitter.

Connect a test lead between the transmitter **+** and ⏚ terminals.

Press the [START STOP] key to start transmitting the signal.

Press the power key ⏻ to turn on the receiver.

Move the receiver over the body of the transmitter toward the test lead.

If the received signal level decreases at the test lead then the internal fuse has blown.

The internal fuse is not user replaceable and the CD1000 should be returned to Martindale Electric.

4.3 Test Lead Replacement
If the test leads become damaged they should be replaced.

⚠ The replacement test leads must have the same overvoltage category rating as the TL47 leads supplied, or better.

4.4 Calibration
To maintain the integrity of measurements made using your instrument, Martindale Electric recommends that it is returned at least once a year to an approved Calibration Laboratory for recalibration and certification.
Martindale Electric is pleased to offer you this service. Please contact our Service Department for details.
Email: service@martindale-electric.co.uk
Tel: 01923 650660

4.5 Cleaning
The unit may be cleaned using a soft dry cloth. Do not use moisture, abrasives, solvents, or detergents, which can be conductive.

4.6 Repair & Service
There are no user serviceable parts in this unit other than those that may be described in section 4. Return to Martindale Electric if faulty. Our service department will quote promptly to repair any fault that occurs outside the guarantee period. Before the unit is returned, please ensure that you have checked the unit, batteries, fuse, leads and poor connections.

4.7 Storage Conditions
The instrument should be kept in warm dry conditions away from direct sources of heat or sunlight, and in such a manner as to preserve the working life of the unit. It is strongly advised that the unit is not kept in a tool box where other tools may damage it.

5. WARRANTY AND LIMITATION OF LIABILITY

This Martindale product is warranted to be free from defects in material and workmanship under normal use and service. The warranty period is 2 years and begins on the date of receipt by the end user. This warranty extends only to the original buyer or end-user customer, and does not apply to fuses, disposable batteries, test leads or to any product which, in Martindale's opinion, has been misused, altered, neglected, contaminated, or damaged by accident or abnormal conditions of operation, handling or storage.

Martindale authorised resellers shall extend this warranty on new and unused products to end-user customers only but have no authority to extend a greater or different warranty on behalf of Martindale.

Martindale's warranty obligation is limited, at Martindale's option, to refund of the purchase price, free of charge repair, or replacement of a defective product which is returned to Martindale within the warranty period.

This warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. Martindale shall not be liable for any special, indirect, incidental or consequential damages or losses, including loss of data, arising from any cause or theory.

Since some jurisdictions do not allow limitation of the term of an implied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any part of any provision of this warranty is held invalid or unenforceable by a court or other decision-maker of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision or other part of that provision.

Nothing in this statement reduces your statutory rights.

MARTINDALE ELECTRIC

Specification CD1000 Cable Detector

ELECTRICAL SPECIFICATIONS
Transmitter:
Output carrier signal frequency: 125 kHz
Voltmeter function:
Range: 12V to 400V DC & AC rms (50Hz to 60Hz)
Accuracy: ± 2.5%
Maximum input voltage 400V DC or AC rms

Receiver:
Tracking Depth

Cable locating mode	Maximum tracking depth
Single pole	2m approx
Dual pole	0.5m approx
Single loop line	2.5m approx
UAC	0.4m approx

GENERAL SPECIFICATIONS
Temperature & Humidity
Operating: 0°C to40°C max 80% R.H. (non condensing)
Storage: -20°C to 60°C max 80% R.H. (non condensing)
Altitude: up to 2000m

MARTINDALE ELECTRIC

Specification CD1000 Cable Detector

Power
Transmitter: single 9V IEC 6LR61 battery
Receiver: 6 x 1.5V AAA, IEC LR03 batteries

Current consumption
Transmitter: 31mA approx minimum
115mA approx maximum
Receiver: 32mA approx minimum
89mA approx maximum
Auto off time: 10 minutes approx (receiver only)

Dimensions
Transmitter: 190 x 89 x 42.5mm
Receiver: 241.5 x 78 x 38.5mm

Weight
Transmitter: 360g approx (batteries not included)
420g approx (batteries included)
Receiver: 280g approx (batteries not included)
350g approx (batteries included)

Includes: bag, TL47 test leads (with crocodile clips), earthing rod, 9V alkaline battery, 1.5V alkaline battery x 6 and instructions.

Safety
Transmitter:
Conforms to BS EN61010-1 CAT III 300V
Class II Double Insulation
Pollution degree: 2

Receiver:
Conforms to BS EN 61010-1 CAT III 600V
Class II Double Insulation
Pollution degree: 2

Test leads supplied conform to BS EN61010-031 CAT III 1000V, 10A

EMC: Conforms to BS EN61326

Check out what else you can get from Martindale:

- 17th Edition Testers
- Accessories
- Calibration Equipment
- Continuity Testers
- Electricians' Kits
- Environmental Products
- Full Calibration & Repair Service
- Fuse Finders
- Digital Clamp Meters
- Digital Multimeters
- Labels
- Microwave Leakage Detectors
- Motor Maintenance Equipment
- Multifunction Testers
- Non-trip Loop Testers
- Pat Testers & Accessories
- Phase Rotation Testers
- Proving Units
- Socket Testers
- Thermometers & Probes
- Test Leads
- Voltage Indicators
- Specialist Metrohm Testers (4 & 5kV)
- Specialist Drummond Testers

MARTINDALE ELECTRIC

Martindale Electric Company Limited
Metrohm House, Imperial Park, Imperial Way,
Watford, Hertfordshire, WD24 4PP, UK
Tel: +44(0)1923 441717 Fax: +44 (0)1923 446900
E-mail:sales@martindale-electric.co.uk

Website: www.martindale-electric.co.uk