

# Daken

## INSTALLATION AND OPERATIONS MANUAL

BT2, BT6, BT12,



**TECHFENCE**

For more information **FREECALL 1800 636 451**

[www.daken.com.au](http://www.daken.com.au)

# **DANGER!**

The Energiser should never be operated with the cover removed as high voltages exist inside the enclosure while operating.

High voltage may remain on some internal parts long after the unit has been switched off. Return the unit to an authorised repairer for service.

Electric fences should only be installed with regard to the relevant Australian Standards and local work place health and safety requirements.

This appliance is not intended for use by young children or infirm persons without supervision.

Young children should be supervised to ensure that they do not play with the appliance.

# Installation and Operations Manual

## Models: BT2, BT6 and BT12

The BT2 Energiser has been designed for small and temporary Electric Fencing applications.

The BT6 and BT12 Energiser have been designed for temporary and permanent Electric Fencing applications.

## Specifications

Model	BT2	BT6	BT12
Range	Up to 2km	Up to 6km	Up to 12km
Power Source	12Volt DC	12Volt DC	12Volt DC
Peak Voltage out	7.5Kv	6.5Kv	7.5Kv
Average Current Consumption	25mA	52mA	66mA
Stored Energy -	0.16 Joules	0.63 Joules	0.82 Joules
Warranty	2 Years	2 Years	2 Years

## Power Requirements

Your BT2, BT6 or BT12 Energiser is designed to be powered by a 12 volt wet battery. (Automotive/ car battery). As the BT2 has a small battery drain a smaller capacity battery is required compared to the BT6 and BT12. These Models have a Low Battery feature which will alert you when your battery requires re-charges.

An alternative to a wet battery is the use of an approved AC Adaptor; see section "Operation with AC Adaptor"

## Energiser Display

1. **Energiser OK** green LED- Flashes with each pulse to show the unit is operating correctly.
2. **Fence Overload** red LED- Flashes slowly (once per pulse) when the fence load exceeds an acceptable level. When this happens it is likely that the fence has a fault or short circuit. Operating into an overload will NOT harm the Energiser.
3. **Low battery** - If the battery voltage drops below a desired level the red LED flashes twice (2). Re-charge the battery and normal operation will continue.
4. **Energiser Fault**- If the red LED flashes 3 or more times the energiser has experienced an internal fault and will require service by a qualified repairer.

## Installation and Operation

The BT2, 6 and 12 Energisers are designed to be Weather Proof when correctly installed. The Energisers must be secured by a screw or wire at least a meter off the ground.

1. Select a location to install your Energiser that will avoid accidental damage by rising water, inquisitive animals, equipment and passers by.
2. If securing to a fence post, using a suitable screw with large flat head, select a location with a minimum of a meter off the ground, hook the screw between the clefts on the back of the energiser.
3. The energiser can also be hung by a fence wire, by locating the wire behind the clefts on the back of the energiser.
4. Power connection, using a **Red** and a **Black** lead supplied, locate the **Red** lead spade connector to the bottom of the energiser marked **+12V Red**, locate the **Black** lead spade connector to the bottom of the energiser marked **-12V Black**.
5. Connection to the fence, using the second **Red** lead supplied, connect the spade connector to the bottom of the energiser to the tag marked **FENCE LIVE**, the alligator clip is then clipped to the Live wire of your fence.
6. Connection to Earth, using the **Green** lead supplied, connect the spade terminal to the tag marked **FENCE EARTH**, the alligator clip is then connected to your earth stake.
7. Connection to battery- connect the **Black** alligator clip to your battery negative (-), connect the Red alligator clip to your battery positive (+).
8. Push the **ON/OFF** button located on the front of the energiser to turn **On** or **Off** your energiser. (See Energiser Display above for output interpretation)

## Earthing

In order for an animal to receive an electric shock, there must be a good current flow from the output terminal of the energiser to the animal, and back to the earth terminal at the energiser completing the circuit. Therefore good earthing is essential for a good system. *For detailed information on earthing see the Daken Electric Fencing Manual.*

### **Operation with AC Adaptor**

You can also power your BT2, BT6 or BT12 from an approved AC Adaptor. Daken has an AC Adaptor specifically for these models and recommends its uses (part No. 70290).

### **Warning!**

**When using an AC Adaptor your Energiser must be installed inside, out of the Weather.**

**When you add an AC Adaptor you are effectively changing your Energiser from a battery powered Energiser to a Mains powered energiser. For full details on Mains powered Installation see the DakenAg Electric Fencing Manual.**

### **Installation using AC Adaptor**

Install Inside, out of weather, in a dry safe and secure location.

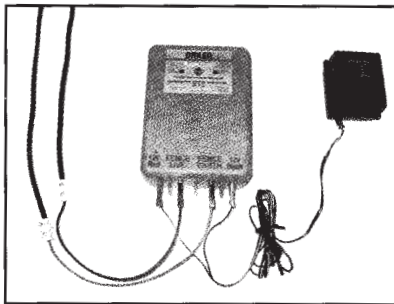
Use the leads from with the Adaptor, connect the Red plug to the + positive power connection on the energiser, connect the Black plug to the – negative power connection on the energiser.

Output power leads supplied.

The Red lead is for the Live output, Black (or Green) is for earth output.

Use Daken underground cable to run power from the Live and Earth to the start of your fence. Bare only enough of the conductor to fit into the connector supplied. Screw up tightly.

Ensure that the connectors are not touching against the walls of a metal building; you may wish to bind the individual connections in electrical tape. See the Daken Electric Fencing Manual for more information.



# Trouble shooting

For tips on fence construction please see the Electric Fencing Manual.

## **Energiser problems**

See Energiser Display above.

## **Fence problems**

The most common problem with electric fences is low voltage on the live wires. This can be caused by a poor earth, or a short circuit on the fence. To test the earth or find faults on the fence an electric fence voltmeter is essential, and a Power Probe is even better.

## **Testing the earth.**

This requires an electric fence voltmeter or Power Probe ®.

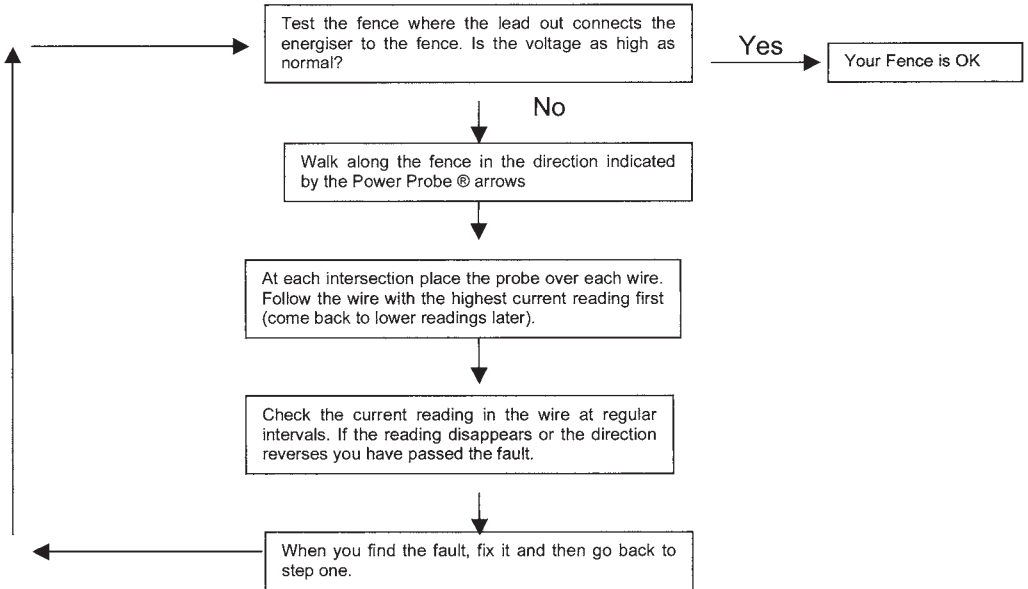
The earth is essential to all electric fence systems. Basically it is some metal in the ground in good contact with preferably moist soil. For more information see the Electric Fencing Manual.

Powerful energizers like the MBT100 require a very good earth. They also require a low resistance wired connection from the energiser to the earth stake. I.e. thick wire, good joints.

With the energiser on and preferably a fault on the fence, measure the voltage on the earth stake. It should be less than 0.5kV.

## Fault finding the fence.

This requires an electric fence voltmeter or Power Probe ®.



# Instructions for installation and connection of electric fences in Australia as required under AS3350.2.76

## Definitions

### Connecting lead

an electric conductor, used to connect the **energizer** to the **electric fence** or the **earth electrode**

### Electric animal fence

an **electric fence** used to contain animals within or exclude animals from a particular area

### Electric fence

a barrier which includes one or more electric conductors, insulated from earth, to which electric pulses are applied by an **energizer**

### Electric security fence

a fence used for security purposes which comprises an **electric fence** and a physical barrier electrically isolated from the **electric fence**

## General requirements for electric fences

1. **Electric fences** shall be installed and operated so that they cause no electrical hazard to persons, animals or their surroundings.
2. **Electric fence** constructions which are likely to lead to the entanglement of animals or persons shall be avoided.
3. An **electric fence** shall not be supplied from two different **energizers** or from independent fence circuits of the same **energizer**. For any two different **electric fences**, each supplied from a different **energizer** independently timed, the distance between the wires of the two **electric fences** shall be at least 2 m. If this gap is to be closed, this shall be effected by means of electrically non-conductive material or an isolated metal barrier.
4. Barbed wire or razor wire shall not be electrified by an **energizer**.
5. Any part of an **electric fence** which is installed along a public road or pathway shall be identified at frequent intervals by warning plates securely fastened to the fence posts or firmly clamped to the fence wires.
  1. The size of the warning plates shall be at least 100 mm x 200 mm.
  2. The background colour of both sides of the warning plate shall be yellow. The colour on the



plate shall be black and shall be either:

1. the symbol of Figure 1, or
  2. the substance of TAKE CARE - ELECTRIC FENCE.
3. The inscription shall be indelible, inscribed on both sides of the warning plate and have a height of at least 25 mm.

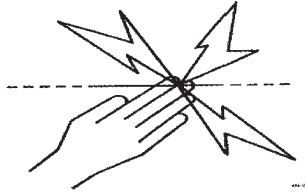


Figure 1 – Warning plate symbol

6. The **energizer earth electrode** shall penetrate the ground to a depth of at least 1 m.
7. **Connecting leads** that are run inside buildings shall be effectively insulated from the earthed structural parts of the building. This may be achieved by using insulated high voltage cable.
8. **Connecting leads** that are run underground shall be run in a conduit of insulating material or else insulated high voltage cable shall be used. Care shall be taken to avoid damage to the **connecting leads** due to the effects of animal hooves or tractor wheels sinking into the ground.
9. **Connecting leads** shall not be installed in the same conduit as the mains supply wiring, communicating cables or data cables.
10. **Connecting leads** and **electric fence** wires shall not cross above overhead power or communication lines.
11. Crossings with overhead power lines shall be avoided wherever possible. If such a crossing cannot be avoided, it shall be made underneath the power line and as nearly as possible at right angles to it.
12. If **connecting leads** and **electric fence** wires are installed near an overhead power line, the clearances shall be not less than those shown in table 3.

Power line voltage V	Clearance m
<=1 000	3
>1 000 <=33 000	4
>33 000	8

Table 1 – Minimum Clearances from Power Lines

**Table 1 – Minimum Clearances from Power Lines**

13. If **connecting leads** and **electric fence** wires are installed near an overhead power line, their height above the ground shall not exceed 2 m. This height applies either side of the orthogonal projection of the outermost conductors of the power line on the ground surface, for a distance of
- 2 m for power lines operating at a nominal voltage not exceeding 1,000 V
  - 15 m for power lines operating at a nominal voltage exceeding 1,000 V.

**Particular requirements for electric animal fences in Australia**

14. A distance of at least 10 m shall be maintained between the **energizer earth electrode** and any other earthing system such as the power supply system protective earth or the telecommunication system earth.
15. **Electric fences** intended for deterring birds, household pet containment or training animals such as cows need only be supplied from low output **energizers** to obtain satisfactory and safe performance.
16. In **electric fences** intended for deterring birds from roosting on buildings, no **electric fence** wire shall be connected to the **energizer earth electrode**. A warning plate, as described above, shall be fitted to every point where persons may gain ready access to the conductors.
17. A non-electrified fence incorporating barbed wire or razor wire may be used to support one or more off-set electrified wires of an **electric animal fence**. The supporting devices for the electrified wires shall be constructed so as to ensure that these wires are positioned at a minimum distance of 150 mm from the vertical plane of the non-electrified wires. The barbed wire and razor wire shall be earthed at regular intervals.
18. Where an **electric animal fence** crosses a public pathway, a non-electrified gate shall be incorporated in the **electric fence** at the point or a crossing by means of stiles shall be provided. At any such crossing, the adjacent electrified wires shall carry warning plates as described above.

**PROHIBITED MOUNTING**

Electric fence conductors should not be mounted on a support used for any overhead power line.

# WARRANTY

Daken Pty Ltd warrants that this energiser is free from defects in material and workmanship. This warranty is limited to replacing any part which appears, upon inspection by the manufacturer, to be defective in material or workmanship.

The warranty period is for two calendar years from the date of purchase.

This warranty does not obligate the manufacturer, his agent or dealer, to bear the freight costs incurred in the repair or replacement of any defective part.

This warranty is void if energiser is tampered with, or non genuine parts are used, or if repairs or alterations have been made without the manufacturers written authority.

This warranty does not include repairs to energisers that have been damaged through abuse, misuse, neglect, improper and incorrect installation, lightning, water immersion, flood, insect infestation, or damaged battery leakage, or damage from livestock, domestic or feral animals, also poor quality water supply from mains and inverters. Please complete and return the attached Warranty Card.

Complete the information below for your information.

**Model No:** ..... **Date of Purchase:** .....

**Serial No:** ..... **Dealer:** .....

## For assistance

For more information on electric fences please see [www.daken.com.au](http://www.daken.com.au)

If at any time you have problems, difficulties or require help, please call our FREE HELP LINE: 1800 636 451, whatever the question, we are there to help.

If repairs are needed return the BT2 Energiser to Daken Pty Ltd along with your proof of purchase, or contact the store of purchase or distributor.

E-mail: [daken@clarkeequipment.com.au](mailto:daken@clarkeequipment.com.au)

## DAKEN PTY LIMITED

ABN 53 004 476 484

### New South Wales Office

30 Salisbury Road

PO Box 50,

Hornsby Nsw 1603

Telephone:(02)9477 2599

Facsimile: (02) 9477 7027

Or Contact Daken Pty:

**Toll Free Telephone: 1800 636 451**

**Toll Free Facsimile: 1800 809 862**

**Email: [daken@clarkeequipment.com.au](mailto:daken@clarkeequipment.com.au)**

**Website: [www.daken.com.au](http://www.daken.com.au)**

## Disclaimer

Whilst every effort has been made to check that the information contained is accurate Daken Pty Ltd will not be liable to loss or damage resulting from construction, operation or failure of any installation or system.

Installation of security electric fences should be made by trained professionals with regard to the relevant Australia Standards and local work place health and safety requirements.

