


**230V ~ / 12V** 

- › fencee **energy DUO ED80**
- › fencee **energy DUO ED100**
- › fencee **energy DUO ED120**
- › fencee **energy DUO ED150**

	STORED ENERGY	OUTPUT ENERGY	OUTPUT VOLTAGE	OUTPUT VOLTAGE 500 Ω	SWITCHING ON/OFF	<small>TEOR. MAX. DEE</small> 			
fencee <b>energy DUO ED80</b>	11 J	8 J	10 000V	7000V	✓	230 km	80 km	17 km	8 km
fencee <b>energy DUO ED100</b>	13 J	10 J	10 000V	7000V	✓	300 km	90 km	22 km	10 km
fencee <b>energy DUO ED120</b>	15 J	12 J	10 500V	7500V	✓	320 km	100 km	25 km	13 km
fencee <b>energy DUO ED150</b>	20 J	15 J	10 500V	7500V	✓	350 km	120 km	28 km	16 km

# DECLARATION OF CONFORMITY

**Manufacturer:**

VNT electronics s.r.o.  
Dvorská 605, 563 01 Lanškroun  
Company ID-No.: 64793826  
declares that the below listed products:

**ENERGIZER FOR ELECTRIC FENCES**

fencee **energy DUO ED80**, fencee **energy DUO ED100**  
fencee **energy DUO ED120**, fencee **energy DUO ED150**

are in accordance with requirements of standards  
and regulations relevant for given type of devices:

**2014/35/EU**  
**2014/30/EU**



Products are safe under condition of their conventional use  
in accordance with instructions for use. Declaration  
of conformity is issued pursuant to these materials:

**Test Report No.:**  
**38 400**

Issued by accredited **Státní zkušebnou strojů a.s.**,  
Třanovského 622/11, 163 00, Praha 6.

This declaration is issued at explicit responsibility of the manufacturer.

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In Lanškroun October 8th. 2019

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Executive Head of the Company  
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**www.fencee.eu**



Thank you for purchasing the product fence of the company **VNT electronics s.r.o.**  
 The equipment conforms to safety regulations in accordance with  
 valid legislation as well as relevant EU (CE) regulations.

**We also ask you to read these instructions for use before using the device carefully  
 and to keep it for possible application in the future.**

**Electric fence must be constructed so that persons are protected against  
 unintentional contact with pulses conductors under normal operating conditions.**

From a legislative point of view, they are primarily covered by **EN 60335-2-76 ed. 3** (Household and similar electrical appliances – Safety – Part 2-76: Particular requirements for power sources for electric fencing devices) and by standards **2014/35/EU – 2014/30/EU**.

## 1. CONTENT

<b>1</b>	Content .....	<b>3</b>
<b>2</b>	Important recommendations .....	<b>4</b>
<b>3</b>	Package contents .....	<b>4</b>
<b>4</b>	Function of the electric fence .....	<b>5</b>
<b>5</b>	Introduction .....	<b>6</b>
	5.1 Energizers ED with power output higher than 5 J .....	<b>6</b>
	5.2 List of main advantages .....	<b>7</b>
<b>6</b>	Product description .....	<b>8</b>
<b>7</b>	Ready to use .....	<b>9</b>
<b>8</b>	Control .....	<b>12</b>
<b>9</b>	Explanation of LED indicating lights and bargraph indicator .....	<b>13</b>
<b>10</b>	Display .....	<b>14</b>
	10.1 Basic screen .....	<b>14</b>
	10.2 Informative screen .....	<b>16</b>
	10.3 Setting screen .....	<b>16</b>
<b>11</b>	Safety guidelines .....	<b>18</b>
<b>12</b>	Troubleshooting .....	<b>21</b>
<b>13</b>	Guarantee .....	<b>22</b>
<b>14</b>	Technical parameters .....	<b>23</b>

## 2. IMPORTANT RECOMMENDATIONS



We recommend that this manual is read thoroughly and fully understood before using the device and that it is retained for future reference!

- The energizer will provide better protection for your animals and land. Local conditions and surroundings always affect the device function and for that reason the manufacturer is not able to guarantee full protection against damage to the fence system.
  - Only use the original 14 V / 2 A adapter to supply the energizer. The supply voltage must not exceed 16 V. Controller must be used if the solar panel is used as the energizer must not be connected directly to the panel.
  - Switch off the energizer before carrying out any work on the electric fence system.
  - Read thoroughly the Safety Guidelines paragraph.
  - Strictly observe all safety guidelines during installation work.
  - Do not connect the device on one fence system to another appliance. Damage to all connected devices and appliances may occur in the event of lightning strike.
  - The device may only be repaired by the manufacturer's qualified personnel.
  - Please dispose all waste in accordance with your country's code of practice.
  - Do not let the unconnected battery cable hang freely as the short circuit and the consequent destruction of the energizer may take place.
- **The displayed output voltage tolerance is  $\pm 10\%$ .**

## 3. PACKAGE CONTENTS

- Energizer fencee **energy DUO ED**
- Earthing cable 150 cm
- Connecting cable to the fence system 100 cm
- 14 V / 2 A power supply adapter for mains connection
- Battery cable
- fencee warning sign – Warning! Electric fence!
- 2 installation self-tapping screws and rawlplugs
- User Manual

## 4. FUNCTION OF THE ELECTRIC FENCE

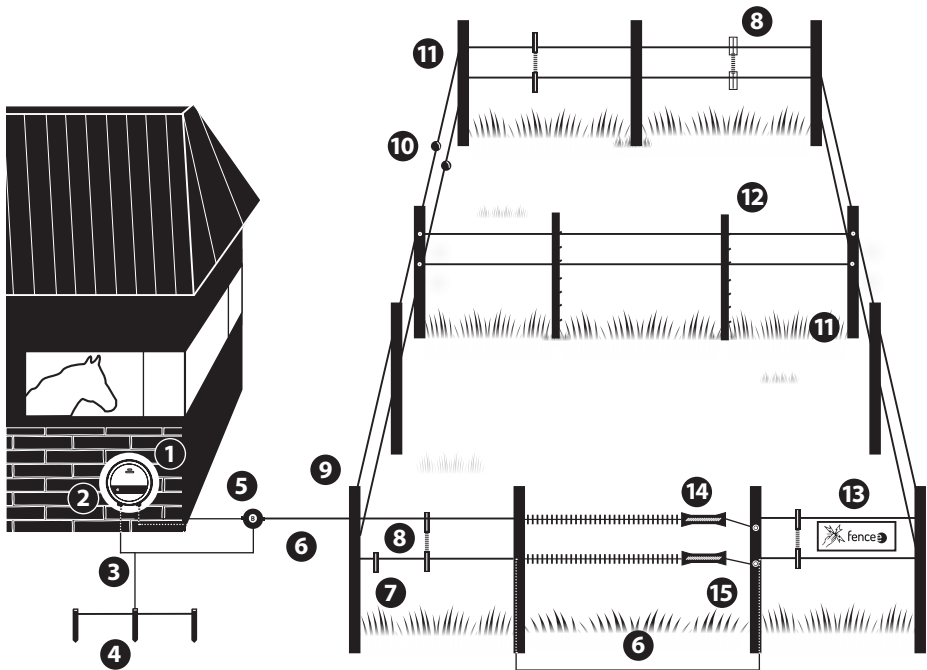
### How the electric fence works

Electric fence system consist from the energizer and fencing marked with posts and conductors. The energizer creates regular high-voltage impulses that generate a voltage between the conducting material and the ground. When an animal (or a person, vegetation or similar) creates a connection between the ground and the conducting material, the circuit is completed.

Generated impulses are unpleasant, but not dangerous to people or animals as they only act for a short period of time and results in the desired deterrent effect. The impulse lasts for a matter of milliseconds. These fences serve not only to enclose an area, but also act as a deterrent e.g. to protect against wild boars.

### Benefits of electric fence systems:

- Electric fences are long-lasting, simple to put up and great value for money compared with normal fences.
- It is easy to assembly and flexible for using.
- Designed for guarding and protecting different animals.
- Compared to other fences, such as barbed wire, it does not cause any damage to the animals.



1	Energizer fence
2	ON/OFF button on energizer
3	Earthing cable
4	Anticorrosive earthing rod
5	Lightning diverter

6	High-voltage connecting cable
7	Conductor
8	Line connector
9	Fixed post
10	Tensioner

11	Insulators
12	Flexible post
13	Warning sign
14	Gate
15	Insulator of gate

## 5. INTRODUCTION

Powerful energizers **energy DUO ED** are suitable for long and densely overgrown fence systems, where it is essential to ensure maximum efficiency and reliability. Owing to their performance, they are able to overcome even densely overgrown fence systems and provide required voltage along the entire fence length. The integrated microprocessor fully controls the operation and ensures optimal performance taking into account the condition of the fence system and the current situation.


energizer **energy DUO ED** may be either powered from 230 V mains using 14 V power supply adapter (include in the package contents) or appropriate 12 V battery.

The fence load is continuously measured during the fence systems operation. The energizers **energy DUO ED** power output is then automatically adjusted to keep the required output voltage in the widest possible load range. This control significantly aids in saving energy when using quality fence system with a low load. It also optimises energy consumption to maintain adequately high fence system voltage, which is, for example, overgrown with grass (high load).

LED indicator lights and BARGRAF on the front of the energizer show the power supply status and fence system voltage and also signal any potential faults on the fence.

### 5.1 Energizers fencee energy DUO ED with power output higher than 5 J

Standard's special requirements must be observed for energizers with power output higher than 5 J, namely time cut-off limit when the power output is increased and thus ensuring safety.

Products must be identified by mark 

fencee energizers have time cut-off limit of 50 seconds, which means that whilst the fence system is under load and its resistance drops below 500 Ohm (overgrown grass, fallen branches, etc.), the energizer will supply the maximum of 5 J for 50 s. If the fence system resistance does not increase during this time (carrying out corrective measures), the energizer will gradually increase the power output (e.g. **ED150** model up to 15 J).

Acoustic and visual warning when the fence system is suddenly under load is another feature. If the fence resistance drops abruptly during one pulse from over than 1,000 Ohm to less than 400 Ohm (fallen branches, tangled animal or human, etc.), alarm is triggered after six pulses, acoustic warning and red LED indicator light flashes. At the same time, the pulse period is shortened to 3 s. The alarm is switched off after increasing the fence resistance to more than 600 Ohm or after the time limit of 10 min. Both functions are independent and separate.

## 5.2 List of main advantages



### Combined power supply

Power supply is either from 230 V mains or standard 12 V battery, which may also be used as the backup power supply.



### LCD display

Large graphic LCD display that shows all important information.



### Reduced power

Yellow terminal for reduced power output.



### Power switching

Manual switching between the high and low power output; option for reducing demand on the battery.



### LED Bargraph

Provides visual information on fence system status.



### Battery management

Battery status monitoring and management.



### Control push buttons

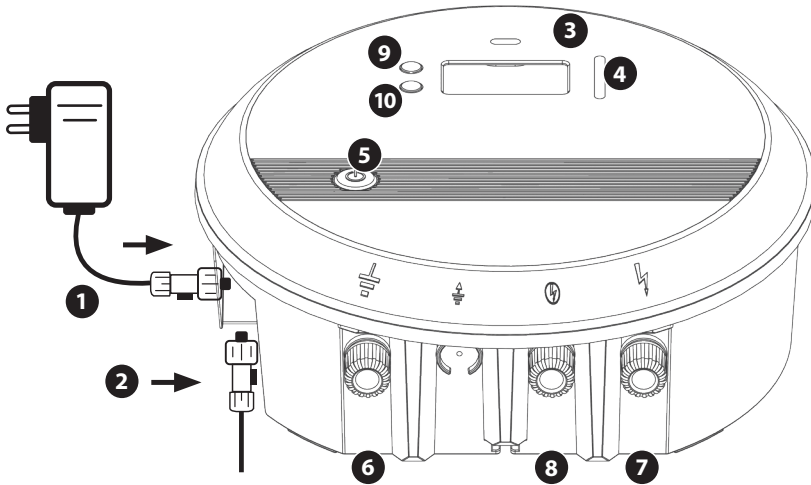
Easy and simple operation.



### Time delay 50 s




Increase power to maximum power for safety reasons.

## 6. PRODUCT DESCRIPTION



1	Waterproof connector for connecting 14 V / 2 A adapter
2	Waterproof connector for connecting 12 V battery
3	Energizer connection monitoring and status indication shown on LED display
4	BARGRAF shows fence system voltage
5	ON/OFF switch
6	Earthing (black)
7	Connection to the fence system (red)
8	Connection to fence system with reduced power (yellow)
9	Push button for selecting particular display
10	Push button used for confirming / Changing values

### Meaning of displayed symbols

-  Earthing connection for connecting to your earthing system.
-  Full voltage fence system connection for connecting to your fence system.
-  Reduced power fence system connection.

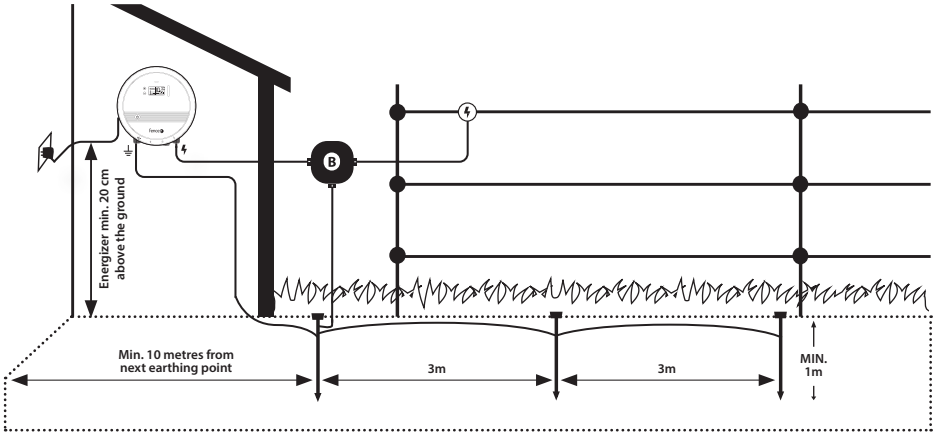


## 7. READY TO USE

### Choose a place suitable for installation of energizer:

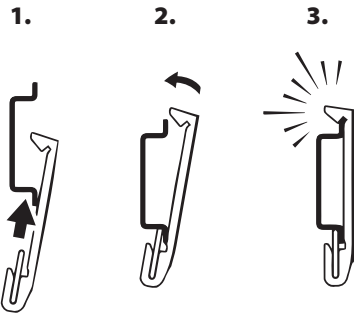
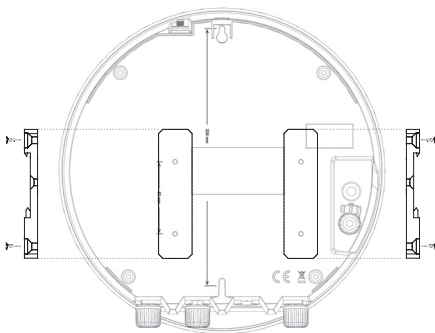
- Where you can achieve a good earthing.
- Which is distant enough from children and animals.
- Where energizer is well accessible.
- Where permanent water stream is avoided.

To mount energizer on wall, use attached screws, on which you can hang the energizer easily.



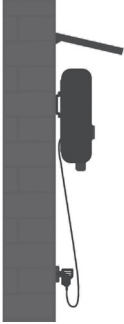
### Assembly of energizer by using DIN rail

Energizer can be easily and practically mounted by using DIN rail and mounting bracket. Set for assembly on DIN rail can be ordered as separate accessories.



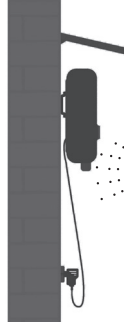


- Energizers must be installed in a dry place.
- Never put energizer on ground – in moist or wet environment.
- Fasten energizer by means of hanging screw or DIN rail with mounting bracket in vertical position – at least 20 cm above ground.
- Never expose energizer to continuous water stream.

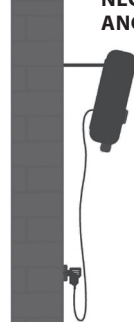


**VERTICAL ON THE WALL IDEALLY WITH A CANOPY**

We recommend mounting on DIN rail



**NEVER EXPOSE TO A CONTINUOUS STREAM OF WATER!**



**NEGATIVE ANGLE**



**ON THE GROUND – IN A PUDDLE**



**ON THE GROUND – UPSIDE DOWN**



## Earthing

**Correct earthing is very important because total function of the fence system is dependent on it!**

Beat earthing rod with corrosion protection into ground completely at place with maximum and permanent humidity. On dry pieces of land or in case of soils with lower electric conductivity, use one or several supplementary earthing rods (with length of minimum of 1 m) and place them at distance of approximately 3 metres from each other.

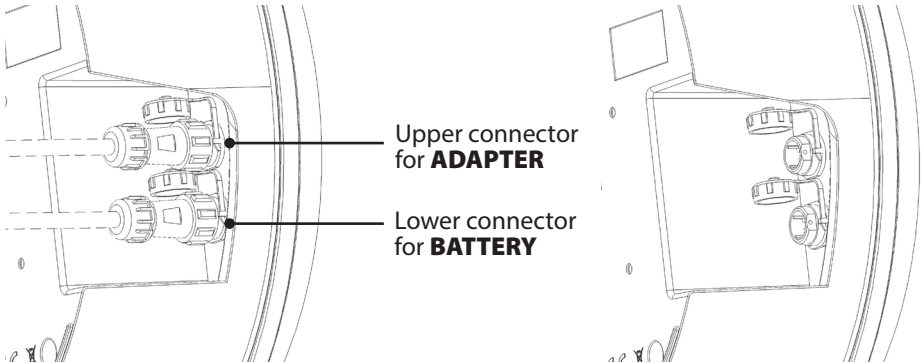
Exceptions are fence system powered by battery energizer or working with low output. Here minimum length of earthing rod of 50 cm is recommended.

Distance of at least 10 metres must be between earthing rod of fence system and another earthing system, for example earthing of a house, protective earthing of electric supply system or earthing of violation alarm.

Do not connect the energizer to already existing earthing.

## Connecting connectors



Models fencee **energy DUO ED** have two waterproof input connectors; upper one for adapter connection and lower one for battery connection. Connectors may be wrongly connected thus always make sure that the correct connections taken place. This design has preference for connecting to the mains voltage with the option of connecting to the battery, as a backup power supply in the event of power failure. Running the energizer for a long time just from the battery is not desirable due to the higher energy consumption and low capacity of conventional batteries.



**If one of the connectors is not used then the connector cover must be screwed in to keep the connector watertight.**

**If the the adapter and battery are connected to wrong connectors, charging and the low battery indication will not work and the battery will not be discharging.**

## Connecting output terminals

-  Connect **the black earthing output** to the earthing rod using earthing cable.
-  Connect **the red output** to the fence system using the connecting cable.

**Yellow output** is intended for connecting fence system where we always require reduced energy in order that animals receive weaker, approximately half strength impulse; this relates to fence system for younger and smaller animals (foals, calves). It is also connected separately to the larger fence system lower wire, where vegetation is expected to be dense with technical measures to prevent losses, namely voltage leakage to the ground as it is usual in standard connections thus the energizer power output is not reduced. The other wires connected to the red terminal are powered separately at full voltage.

## 8. CONTROL

### ON/OFF AND POWER OUTPUT SWITCHING PUSH BUTTON

As with power DUO PD models, large control push button is used for basic control. Unlike power P models, the ON/OFF switch push button has extended functionality, which is used for switching the energizer power output. After switching off and then switching on again, the energizer remembers the last set power output.

#### ENERGIZER IS SWITCHED OFF; BY PRESSING PUSH BUTTON:



Long press (> 2 s) → **Energizer is switched on**

Short press → **No response**

#### ENERGIZER IS SWITCHED ON; BY PRESSING PUSH BUTTON:



Long press (> 2 s) → **Manual switching between the high and low power output (approximately 50%)**. User selectable; when, for example, it is used for more sensitive animals or to reduce demand on battery, if required. The low power output is always limited to the maximum of 5 J.

Short press → **Energizer is fully switched off**

## 9. EXPLANATION OF LED INDICATING LIGHTS AND BARGRAPH INDICATOR

### LED control:

#### BURNING / BLINKING

- **blinking** – operation on battery only
- **permanent burning** – operation with adapter

#### COLOR

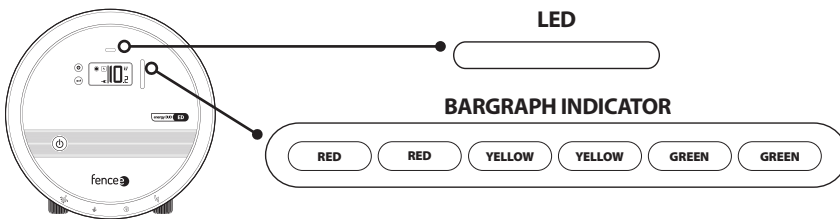
- **blue** – operation at higher output (100%)
- **purple** – operation at lower output (c. 50%)
- **red** – it lights up when battery voltage drops below 12 V.

When battery voltage drops below 11,6 V, warning siren is started (beeping). When battery voltage drops below 11,4 V, energizer is switched off. Reason is protection of battery from deep discharge of the battery (battery destruction). If discharged battery and adapter are connected simultaneously, red LED is burning, until battery is charged at 12 V at least.

### BARGRAPH INDICATOR:

To indicate input voltage at fence system, **energy DUO ED** models are equipped with BARGRAPH indicator. It consists of six **LEDs** – **2x RED** | **2x YELLOW** | **2x GREEN** – sorted from bottom to top. BARGRAPH indicator always goes through LEDs from the first red one up to indicated position where it stops for a while.

### Indicating statuses are as follows:



- voltage **< 3 kV** – 1x RED



- voltage **3–5 kV** – 2x RED



- voltage **5–6 kV** – 1x YELLOW



- voltage **6–7 kV** – 2x YELLOW



- voltage **7–8 kV** – 1x GREEN



- voltage **> 8 kV** – 2x GREEN





## 10. DISPLAY

In the **energy DUO ED** models, an information display and two buttons for the control of this display have been added.

 **SETUP** button

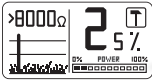
 **CONFIRM** button

The display shows information on three different screens, which can be cycled with the **setup** button .


Use the **confirm** button  to change or confirm the parameters on the screen.

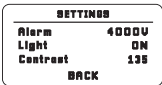


The **first basic screen** contains a large numeral of the selected parameter on the right, and icons indicating the energizer status appear on the left.





On the **second informative screen** is displayed the status of the fence on the left, both numerically (resistance of the fence), but also graphically with an icon of overgrown grass.

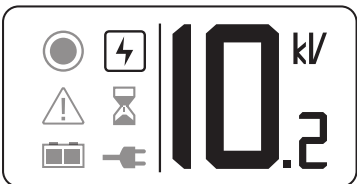
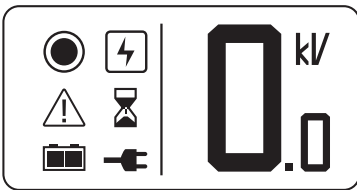
On the first and second screens, you can select between the displayed parameters using the **confirmation** button . There are three options that repeat in a circle – output voltage [kV], battery voltage [V] and output energy [%].



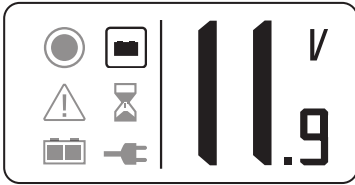
**Setting screen**

In the third setting screen, you can use the **confirm** button  to access the individual settings between which you move, using the **setting** button .

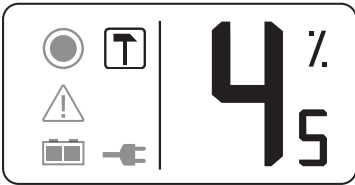
### 10.1 Basic screen



**Output voltage**








 **Battery voltage**





 **Output performance – Data indicating the energizer output needed in the present condition of the fence, due to its loading and losses.**

### Icons on the display:


  Icons indicating the 50% / 100% mode.

   Indicating the displayed parameter.


 Triangle indicating a warning.

 Hourglass indicates a time delay before ramping up the performance.

 Icon indicating the connection of a battery and its status.

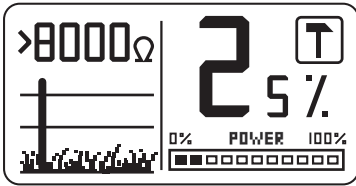
 **Full battery** / blue – violet led → **over 12 V**

 **Half battery** / red led → **12–11,6 V**

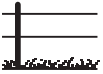
 **Empty battery** / red led + siren → **11,6–11,4 V**  
**The energizer will shut down** → **less than 11,4 V**

 Indicates connection to the grid.

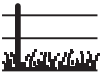
## 10.2 Informative screen



### On-screen icons indicating the load on the fence:



**> 1000 ohm** – a short pen with minimum greenery



**1000 ohm** – medium pen, with mild growth of vegetation



**500 ohm** – longer pen, mild growth of greenery



**300 ohm** – longer pen, medium growth of greenery or mild growth after rain



**< 300 ohm** – a pen with a dense growth of vegetation, with high power loss

## 10.3 Setting screen

It is used to set the generator parameters.

### The following items are available:

#### Setting

- **Alarm** – The voltage setting at which the alarm is triggered can be set in the range of 0–8000 V, when 0 kV the voltage alarm is off.
- **Light** – Setting the backlight time. Here you can set the values of 1 minute, 5 minutes and continuous light (ON).
- **Contrast** – Setting the display contrast in the range 90–150.

#### Entering the screen

1. ⬅ Enter the screen
2. Ⓞ Select an item
3. ⬅ Confirm the selection
4. Ⓞ Adjust the values
5. ⬅ Confirm the values

#### Leaving the screen

1. Ⓞ Select the BACK item
2. ⬅ Confirm your choice
  - Ⓞ You can toggle among screens

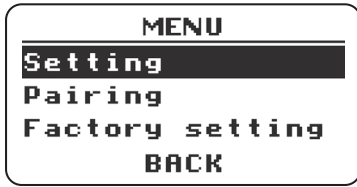
#### Back


This serves to leave the settings menu.




## Example of setting the lighting time at 1 min.

Use the **settings**  button to enter the settings screen




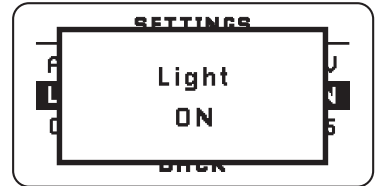
Use the **enter**  button to enter the settings




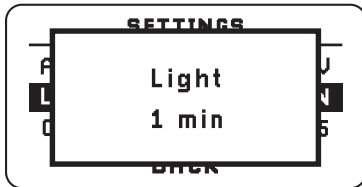
Use the **settings**  button to select an item



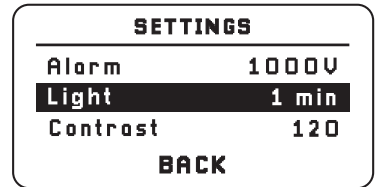
Use the **enter**  button to select adjustment of an item



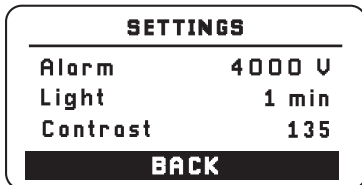
Use the **settings**  button to change the value



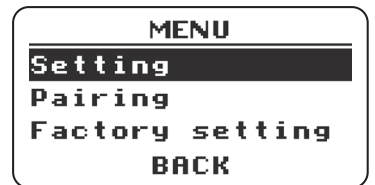
Use the **enter**  button to confirm the given value



Use the **settings**  button to go to the **back** item



Use the **enter**  button to leave the settings menu



## 11. SAFETY GUIDELINES

Install and operate the electric fence systems in such a way that they do not pose the risk of electric shock to humans, animals or disturb the environment.

Avoid using the electric fence systems that could trap animals or people.

One electric fence system must not be powered by two or more energizers or by independent power supply devices designated for electric fence systems of the same equipment.

When operating two or more different electric fence systems and if they are powered by different energizers, the minimum distance between the electric fences must be 2,5 m. Use electrically non-conductive material if this distance is required to be smaller.

Do not use barbed or razor wire or any other types of sharp-edged wire to install the electric fence system.

Non-conductive additional fencing in which barbed or razor wire is used must be at least 150 mm from the electric fence system wire and must be earthed at regular intervals.

All electric fence system sections installed along the public roads must be marked with warning signs attached to poles or fences at regular intervals and visible from the road.

### Warning sign

- It is of yellow colour with minimum dimensions of 100 × 200 mm
- It is either standard warning sign or contains the following inscription on both sides: **“WARNING! ELECTRIC FENCE”**
- Letters must be at least 25 mm high and indelible
- One warning sign is included in the package contents



### Power supply and connecting cables

- Cables that are rated for voltages higher than 1 kV and are located in buildings must be effectively insulated from the building's earthing features. This may be achieved by using insulated high-voltage cables or by leaving appropriate distance between the cable and the building frame. Do not use standard electrical cables.
- Cables that are laid in the ground (soil) must be protected by solid insulator pipes or use insulated high-voltage cables designed for this purpose. Make sure that the cables will not be damaged by, for example animal hooves or tractor wheels, which can sink into the ground. Do not use standard electrical cables.
- Cables must not be placed in pipes together with other circuit, communication or data cables.

## Supply and connecting leads and electric line of fence system:

- Shall not cross above overhead power or communication lines. 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.
- If are installed near an overhead power line, the clearances shall not be less than those shown.

Power line voltage	Clearance
≤ 1000 V	3 metres
> 1000 ≤ 33000 V	4 metres
> 33000 V	8 metres

- If are installed near an overhead power line, their height above the ground shall not exceed 3 m. This height applies to 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 1000 V
  - 15 m for power lines operating at a nominal voltage exceeding 1000 V
- Being nearby telephone line or telephone cable, must be conducted at a distance of minimum of 2 metres.

Electric animal 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.

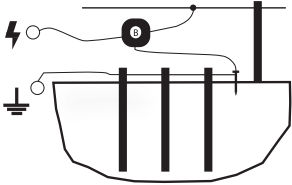
In electrical animal fences intended for deterring birds from roosting on buildings no fence wire shall be grounded if the fence wires are not connected to metal parts. If one wire is connected with a metal part (ie a gutter) or a metal structure of the building these metal parts must be grounded. A warning sign shall be fitted to every point where persons may gain ready access to the conductors.

Where an electric animal fence crosses a public pathway, a non-electrified gate shall be incorporated in the electric animal fence at that point or a crossing by means of stiles shall be provided. At any such crossing, the adjacent electrified wires shall carry warning signs.

Avoid direct contact with fencing, especially with head, neck or upper part of body. Do not creep through the fencing or over it. For passing the fence system, use a gate or another point in installation designed for this purpose.

## Overvoltage protective equipment – lightning diverter

To prevent from damages caused by lightning, we recommend leading a circuit of fence system near to building via overvoltage protective equipment – lightning diverter fastened to outer masonry of the building by means of non-combustible materials before its connecting to energizer. This applied also for combined energizers, if they are used together with a network adapter.



Overvoltage caused by storm can cause insulation of electric fence system. In such a case, network voltage can get into electric fence system, and serious danger to people or animals can occur.

Generally, we recommend connecting network powered electric fence system only to such supply networks that are protected with earth-leakage circuit breaker with maximum actuating current of 30 mA. In addition to that, correct installation of energizer with auxiliary discharger and choking coil is necessary, as described within these instructions. It is suitable to disconnect network supplied electric fence system from network as well as from fencing (if possible) during storm.

If a network with earth-leakage circuit-breaker was not used for purposes of supplying energizer, and the energizer was connected to the fence system or the network during storm, it is necessary to check and test it before putting it into operation again.

For this purpose, connection to network with earth-leakage circuit-breaker must be available. For purposes of testing, connect earthing output of energizer to protective conductor of the supply network and connect pin to power socket protected with earth-leakage circuit-breaker then. If energizer beats correctly and does not show any deviations from normal operation subsequently, it can be connected to fence system again. If the earth-leakage circuit-breaker however falls out when energizer is connected, you must not use it and it must be repaired professionally.

If connecting lines of this energizer are damaged, they must be replaced by manufacturer or authorized service or another qualified person so that possibility of danger is excluded. Service and repairs of these energizers must be performed by authorized persons only!

Each user of electric fence system is responsible for its operation and should perform regular checks of energizer and fence system at least once a day, depending on operating conditions.

Procedure of checking:

- Visual control of energizer and fence system
- Measuring of minimum voltage of 2500 V in every place of the fence system

If installation is performed inside a building, energizer may not be operated in a room with increased risk of fire in any case (barn, shed, cattle shed). In addition to that, no combustible materials may be stored near to fence system and connectors of energizer. Installation of energizer must be made on a fire-resistant surface.

**For stable using, use only energizers designed for that purpose!**

Do not connect battery or accumulator energizers to electric power network or devices being connected to network voltage, except for sources determined to that by the manufacturer, in any case. This energizer may not be used by persons (including children) who have limited physical, perceptive or mental abilities or do not possess sufficient experiences and knowledge, when they are not under supervision or are not trained for operating energizer by persons who are responsible for their safety. Children should be under supervision so that there is not chance that they play with the energizer.

Ensure that all connected network supplied auxiliary circuits have at least the same protection class as energizer.

## 12. TROUBLESHOOTING

In case that electric fence system does not work properly, so there are some tips for troubleshooting.

Cause	Fault removal
<b>Energizer does not work?</b>	Disconnect the device from the fence system and switch it on again! If blue or violet LED is burning and yellow or green LED is flashing on BARGRAPH indicator, then the device works properly. Otherwise, the device is damaged (contact your salesman). When using battery and accumulator devices, observe correct wiring of poles.
<b>Red LED light is blinking</b>	Battery voltage decreased below 12V – replace the battery with a sufficiently charged one or connect adapter.
<b>Red LED light is blinking and warning siren sounds (beeping)</b>	Battery voltage decreased below 11,6 V – replace the battery with a sufficiently charged one or connect adapter.
<b>No LED signal is burning</b>	Energizer is switched off manually or battery voltage decreased below 11,4 V and energizer was switched off automatically. Reason is protection of battery from its deep discharge (and battery destruction). Replace the battery with a sufficiently charged one or connect adapter – until battery voltage reaches at least 12 V, red LED will be burning.
<b>Lead-in or short circuit of supply lines of the fence system</b>	Do not use conventional cables for supply lines. High-voltage cable is recommended.
<b>Conductor has adverse properties (thin diameter, high resistance)</b>	Use high-quality conductor with low resistance and larger diameter. Ensure high-quality correct connection of conductors.
<b>Low-quality earthing, too short earth rod, corrosion, dry soil</b>	Add next rod, moisten.
<b>Lead-in via growth near fence system</b>	Remove the growth (mow it).
<b>Conductor on ground (for example break, insufficient mechanical tension)</b>	Repair fencing, use special connectors, stretch conductor.
<b>Too long fence system. Was correct accessories used for given purpose?</b>	Use accessories suitable for given length of fence system and for animals – in case of need, consult specialized salesman.
<b>Insulator pierces, losses occur</b>	Replace defective and weather-worn insulators.
<b>Conductor is connected via knot, insufficient connection</b>	Use relevant special connectors for the conductor.

### 13. GUARANTEE

In addition to a guarantee requested by law, we provide you with a guarantee in accordance with below listed conditions:

- Guarantee period begins on the day of its purchase. Guarantee claims are acknowledged explicitly pursuant to submission of bill or cash voucher. Guarantee repair is free of charge, or we reserve the right to deliver a device of the same value.
- Guarantee is valid in case of correct use in accordance with the instructions for use. It expires in case of interferences by unauthorized persons and in case of using spare parts of foreign origin.
- All deficiencies resulting from material defects or manufacturing defects shall be removed in manufacturer's discretion by repairing or free-of-charge replacement of the energizer.
- In case of delivering spare parts or repairing, original guarantee period is not prolonged.
- Guarantee period and address of guarantee provider can be found in attached instructions for use of given type of energizer.
- Accumulators or batteries of any type, damages due to overvoltage (caused by lightning among others) and damages due to spill-over of accumulator acid are not included in the guarantee.

**This energizer is provided with guarantee period of 3 years according to our conditions for guarantee! Safety instructions, earthing, putting into operation, care of batteries and accumulator, conditions for guarantee and possible fault sources can be found in attached instructions for use!**

## 14. TECHNICAL PARAMETERS

	<b>energy DUO ED80</b>	<b>energy DUO ED100</b>	<b>energy DUO ED120</b>	<b>energy DUO ED150</b>
POWER SUPPLY POWER CONSUMPTION	<b>230 V ~</b> 6–11 W <b>12 V ☒</b> 200–750 mA	<b>230 V ~</b> 6–14 W <b>12 V ☒</b> 200–850 mA	<b>230 V ~</b> 6–17 W <b>12 V ☒</b> 200–1000 mA	<b>230 V ~</b> 6–21 W <b>12 V ☒</b> 200–1250 mA
INPUT ENERGY	11 J	13 J	15 J	20 J
OUTPUT ENERGY	8 J	10 J	12 J	15 J
OUTPUT VOLTAGE	10000 V	10000 V	10500 V	10500 V
OUTPUT VOLTAGE 500 Ω	7000 V	7000 V	7500 V	7500 V
LCD DISPLAY	✓	✓	✓	✓
ON/OFF	✓	✓	✓	✓
LED ON/OFF	✓	✓	✓	✓
LED IMPULS	✓	✓	✓	✓
LED LOW BATTERY VOLTAGE	✓	✓	✓	✓
LED POWER LOWER 50%	✓	✓	✓	✓
LED ERROR CHECK	✓	✓	✓	✓
LED IMPULS BARGRAF	✓	✓	✓	✓
TIME DELAY	✓	✓	✓	✓
GROUNDING 1 m	4x	5x	5x	6x
EL. FENCE NETTING	22x	27x	32x	38x
DIN RAIL	✓	✓	✓	✓
WEIGHT	3677 g	3728 g	3844 g	3836 g
DIAMETER	290 mm			
DEPTH	108 mm			



# fencee

Version: 14112023  
NAV-00168

Stamp and signature of seller:

**fencee**  
Electric **fencing**

**VNT electronics s.r.o.**

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[www.fenceecloud.com](http://www.fenceecloud.com)