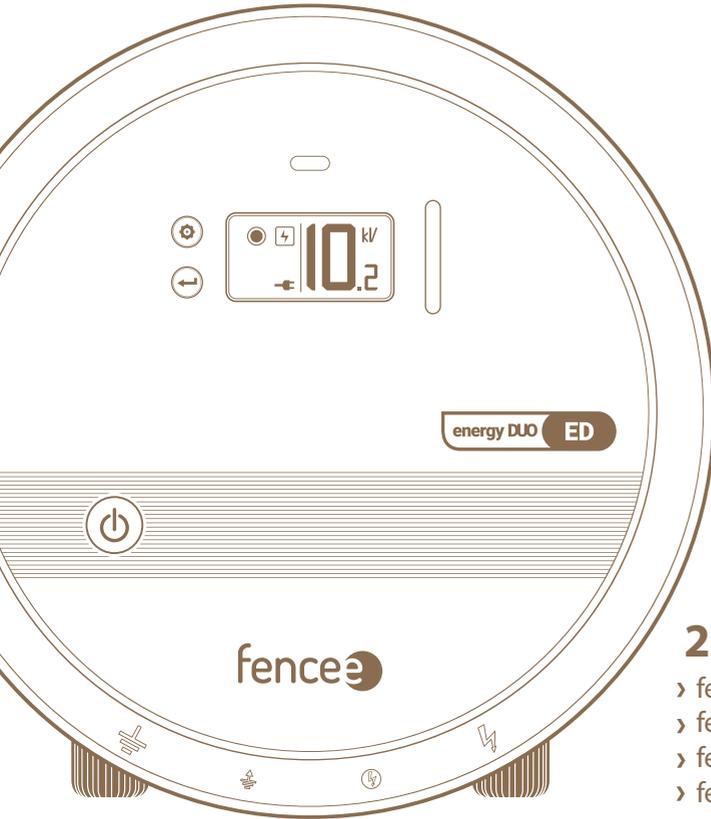




**ENERGIZERS FOR
ELECTRIC FENCE
SYSTEM**

INSTRUCTIONS FOR USE

EN



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				
fencee energy DUO ED80	11 J	8 J	10 000V	7000 V	✓	230 km	80 km	17 km	8 km
fencee energy DUO ED100	13 J	10 J	10 000V	7000 V	✓	300 km	90 km	22 km	10 km
fencee energy DUO ED120	15 J	12 J	10 500V	7500 V	✓	320 km	100 km	25 km	13 km
fencee energy DUO ED150	20 J	15 J	10 500V	7500 V	✓	350 km	120 km	28 km	16 km

Power supply - 230V ~ / 12V

www.fencee.eu

+420 730 893 828

DECLARATION OF CONFORMITY

Manufacturer:
VNT electronics s.r.o.
Dvorská 605, 563 01 Lanškroun
Company ID-No.: 64793826

declares that the below listed products:

ENERGIZERS 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 device^S:

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 zkušebna strojů a.s., Třanovského 622/11,
163 00, Praha 6. This declaration is issued at explicit responsibility
of the manufacturer.

In Lanškroun October 8th, 2019

Ing. Jan Horák
Executive Head of the Company
Phone: +420 730 893 828
info@fencee.eu

www.fencee.eu

A handwritten signature in black ink, appearing to be 'JH', is written over the printed name and contact information.



fencee



Thank you for purchasing the product fence³
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 the point of view of legislation, especially the standard **2014/35/EU - 2014/30/EU**
(Low Voltage Directive - Electric appliances for domestics and similar purposes – Safety - Part
2-76: Special requirement on energizers for electric fences) relate to the fences.

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1. INTRODUCTION

By means of this device, you ensure better protection for your animals and pieces of land.

Local conditions and circumstances always affect functionality of equipment and total protection against violation of fence may not be guaranteed therefore. Manufacturer of the energizer does not grant guarantee that not violation of electric fence installation and so escape of animals occurs. By means of installation of the electric fence, safety of animals in the enclosure or protection of a piece of land should be increased.

Please observe the following instructions for use.

Important notices

- Before performing any activities on energizer or fence system, switch of the energizer.
- Read the Safety instructions carefully.
- When installing, make sure to observe all safety regulations.
- Do not connect the energizer on one fence system with another appliance.
Lightning stroke against the fence connects to all other devices then.
- Use only original spare parts.

2. ENERGIZER OF AN ELECTRIC FENCE – A DESCRIPTION

These powerful energizers are suitable for long fences loaded with lots of vegetation where maximum efficiency and reliability are needed. Thanks to their performance they can overcome even fences with very overgrown vegetation and can ensure sufficient voltage along the fence. The integrated microprocessor controls the entire operation and ensures optimum performance with respect to the fence and current situation.

Combined energizers fencee **energy DUO ED** can be powered from 230 V mains or a suitable 12 V battery.

Energy DUO energizers are equipped with an inseparable power cord and a battery connector. The battery can be connected using the supplied cable with a waterproof connector. This concept prefers to connect the mains voltage with the possibility of connecting the battery as a backup source in the event of a power failure. Powering the energizers just from the battery is not very suitable for longer periods of time, due to higher energy consumption and low capacity of conventional batteries.

During the operation of the fence, the load strain of the fence is continuously measured. The power output of the energy DUO energizer is then automatically adjusted to maintain the desired output voltage within the maximum load range. This regulation helps to save energy when using high-quality enclosure with low load. It also optimizes energy consumption to maintain a sufficiently high voltage on a fence that is, for example, overgrown with grass (high load).

LEDs and BARGRAPH on the front of the energizer show the operation of the power source, measure the voltage on the fence and also indicate a possible failure on the fence.

On the energizer outlet, there is a black grounding output, a red output for connecting the fence and a yellow output for connecting the fence with permanently reduced energy. This yellow clamp is used to connect pens in which younger and smaller animals (foals, calves) will roam so they would receive only a weaker, approximately half impulse. It is also connected separately to the bottom wire of larger pens, where vegetation is expected to penetrate, but this output is technologically protected against losses, there is less voltage leakage to the ground than with conventional wiring and thus the energizer output is not reduced. The other wires connected to the red output are powered separately and at full voltage.

Fencee energy DUO ED energizers with an output of more than 5 J

In the case of energizers with output over 5J, special requirements of the norm must be observed. That means a time delay in performance increase to ensure safety. The product must be marked with the hourglass symbol 

Fencee energizers have a time delay of 50 seconds. This means that when the fence is under load and the fence resistance drops below 500 ohm (overgrown grass, fallen branch,...), the energizer will deliver a maximum of 5J, for 50s. If there is no increase in the fence resistance during this time (eliminating the cause), the energizer will gradually increase the output energy (e.g. **ED150** model up to 15J).

Another function is a warning when the fence is suddenly overloaded. When the fence resistance drops during one pulse from more than 1000 ohms to less than 400 ohms (fallen branch, tangled animal or human, ...), an alarm is triggered after six pulses - a beep sounds and the red LED flashes. At the same time, the pulse period is slowed down to 3 s. The alarm is switched off when the fence resistance is increased to more than 600 ohm or after 10 min. Both functions are independent of each other.



Fig. 1 – Location of the network cable and battery connector

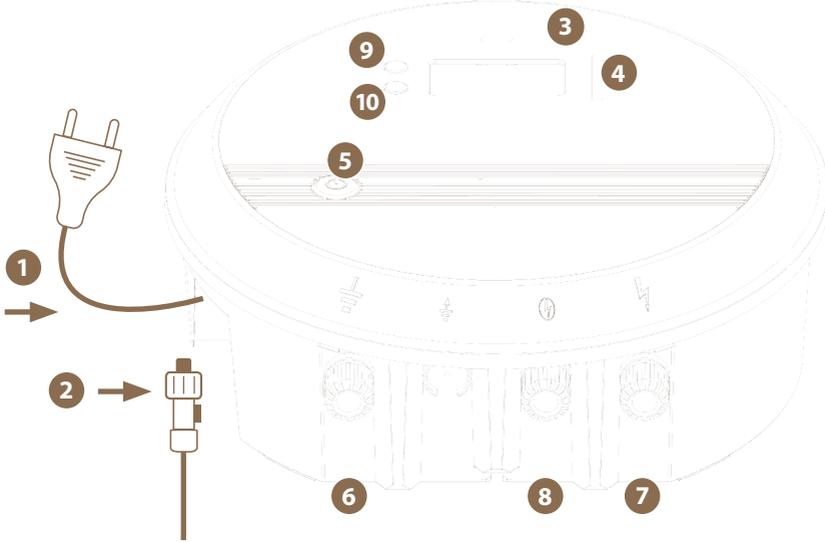


Figure 2: **Energizer of an electric fence**

1	Grid connection connector
2	Waterproof line to connect a battery (12 V)
3	LED indicator of energizer connection indicating the status
4	BARGRAF – indication of voltage in the fence
5	ON/OFF switch
6	Grounding (black)
7	Connection to the fence (red)
8	Connection to a fence with decreased output (yellow)
9	Setting button to select the display
10	Confirm button / Toggle the values

Table 1: **Energizer of an electric fence - a description**

Legend for the symbols on the energizer

-  Earthing line. Connect this line to your grounding system.
-  Fence line with full voltage. Connect to your fence.
-  Fence connection with decreased output.
-  The energizer should be opened or repaired only by qualified persons due to risk of electric shock.
-  Please dispose of the waste according to the regulations of your country.

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** – ordered from left to right. 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:

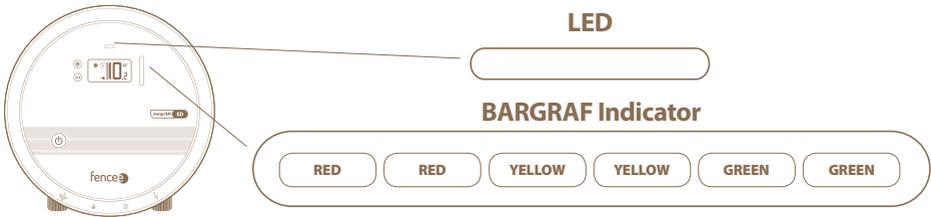


Fig. 3 – BARGRAPH indicator and indicating lights

- 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



OTHER IMPORTANT INFORMATION ABOUT THE ENERGY MODEL POWER CORD + WATERPROOF CONNECTOR

Models **energy DUO ED** have a connecting cable and a waterproof output connector to connect the battery cable.

When connected to the mains and the battery at the same time, the battery gets slightly recharged. The typical 12 V / 40 Ah car battery can be recharged in approximately 7 days when connected to the mains at the same time.



The energizer must not be supplied with a voltage higher than 16 V. If connected to a solar panel, a regulator must be used, and the energizer must not be connected directly to the panel.

The **energy DUO ED** model has the same or lower power consumption compared to other products. **This saves energy and prolongs battery operation.**

Do not let an unplugged battery cable hang loose, as there is a risk of short circuit and destruction of the energizer. When using valve-controlled batteries (gel, AGM type), these batteries must be placed in a well-ventilated area.

3. CONTROLS

TOGLING THE POWER – ON/OFF SWITCH

As with the power DUO PD models, a large control button is provided for basic operation. Unlike the power P models, the on/off switch button has enhanced functionality. When the energizer is switched on for the first time, the blue LED is on or flashing to indicate operation at higher power level. Each time the power is turned on, the energizer remembers which mode has been selected.

WHEN THE ENERGIZER IS OFF

-  long hold of the button (>2s) → **turning the fence on**
-  short press of the button → **does not respond**

WHEN THE ENERGIZER IS ON

-  Long hold of the button (>2s) → **manual switching between high and low output** – selected by the user e.g. to use for more sensitive animals or if battery saving is needed. In the 50 % mode the maximum output is always limited to max 5 J.
-  short press of the button → **turning the fence off**

4. 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 **setting** button . Use the **confirmation** 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 [%].



The **third screen** is for setting the energizer parameters.

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

4.1 Main screen



Figure 4 – Main screen of the display



Figure 5 – Output voltage

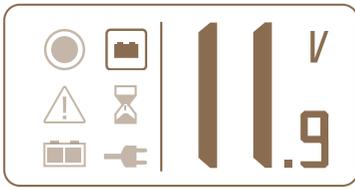
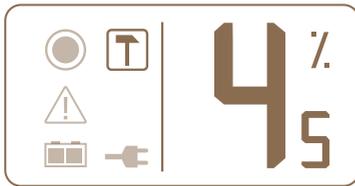


Figure 6 – **Battery voltage**



Figure 7 – **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**

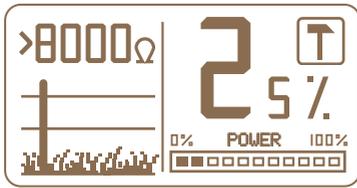
 **Empty battery** / red led + siren → **11,6 - 11,4 V**

The energizer will shut down → **méně než 11,4 V**



Indicates connection to the grid.

4.2 Informative screen



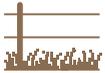
INFORMATIVE SCREEN

Fig. 8 – The second informative screen of the display – indicating the load on the fence.

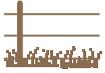
On-screen icons indicating the load on the fence:



>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



Output battery



Output voltage



Output performance

4.3 Third screen

This serves to adjust the parameters of the energizer.

The following items are available:

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 \odot button to enter the settings screen



Fig. 9 – Settings screen

Use the enter \ominus button to enter the settings



Fig. 10 – Entering the settings menu

Use the settings \odot button to select an item



Fig. 11 – Selection of a required item

Use the enter \ominus button to select adjustment of an item



Fig. 12 – Adjustment of an item

Use the settings \odot button to change the value



Fig. 13 – Changing the value

Use the enter \ominus button to confirm the given value

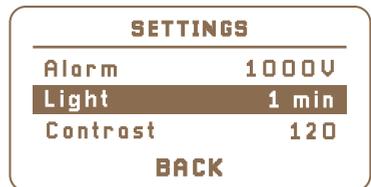


Fig. 14 – Changed value

Use the settings \odot button to go to the back item



Fig. 15 – The “back” item

Use the enter \ominus button to leave the settings menu



Fig. 16 – Leaving the settings menu

5. FUNCTIONALITY 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.

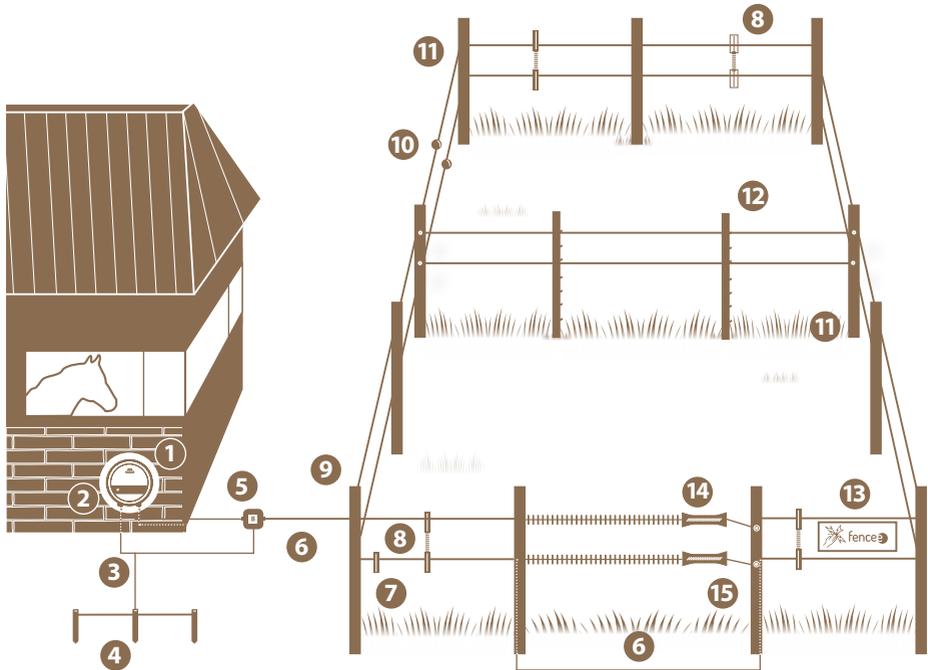


Fig. 17 – Wiring of electric fence

1	Energizer fence	6	High-voltage connecting cable	11	Insulators
2	On/off button on energizer	7	Conductor	12	Flexible post
3	Earthing cable	8	Line connector	13	Warning sign
4	Anticorrosive earthing rod	9	Fixed post	14	Gate
5	Lightning diverter	10	Tensioner	15	Insulator of gate

Table. 2 – Description of individual parts of the fence system

6. INSTALLATION OF THE ENERGIZER

Before installation, please read all Safety instructions listed in these instructions for use carefully.

Choose a place suitable for installation of energizer.

Observe the following measures when choosing a place for installation of energizer.

Choose a place:

- 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.

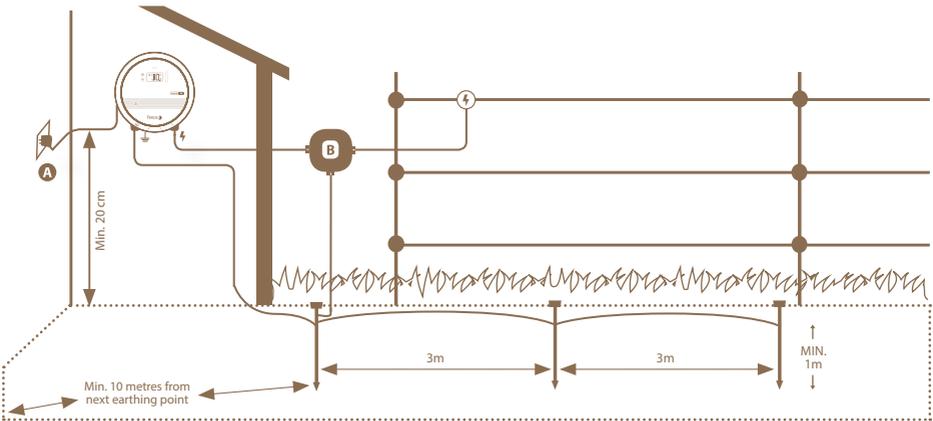


Fig. 18 – Assembly of energizer and earthing

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.

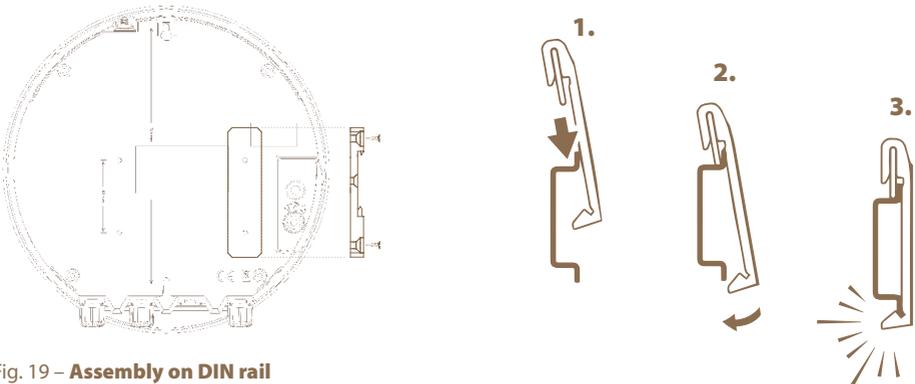


Fig. 19 – Assembly on DIN rail

5. 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.

6. SAFETY INSTRUCTIONS

Electric fence system must be operated in accordance with description mentioned in the instructions for use. We ask you to read these instructions for use thoroughly and keep them safely after successful installation.

Electric animal fences and their ancillary equipment shall be installed, operated and maintained in a manner that minimises danger to persons, animals or their surroundings
Prevent from using electric fence system in which animals or people could get stuck.

An electric animal fence shall not be supplied from two separate energizers or from independent fence circuits of the same energizer.

For any two separate electric animal fences, each supplied from a separate energizer independently timed, the distance between the wires of the two electric animal fences shall be at least 2,5 m. If this gap is to be closed, this shall be effected by means of electrically non-conductive material or an isolated metal barrier.

For installation of electric fence system, do not use barbed wire or razor wire or other types of wires having sharp edges.



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.

Supplementary non-conductive fencing using barbed wire or razor wire must be placed at least 150 mm from conductor of electric fence system and must be earthed at regular intervals.

All sections of electric fence system installed along public communication must be marked with warning sign fastened to posts or to fencing and visible from every point at regular intervals of the communication.

Warning sign (see Figure No. 20):

- It is of yellow color and minimum dimensions of 100 x 200 mm
- It includes either marking according to standard or sign "Attention – electric fence" on both sides
- Height of text must be 25 mm at minimum and data on it must be indelible
- 1 piece of it is a part of this package



Fig. 20 – **Warning sign**

Supply and connecting leads:

- working at voltage higher than 1kV and led in buildings, must be insulated from earthing elements of the building efficiently. You reach that by using insulated high-voltage cables or by keeping sufficient distance between the conductor and building frame. Do not use conventional electric cables.
- being laid in ground (in soil) must be protected by a fixed tube of insulators or use insulated high-voltage cables designed for this purpose again. Also ensure that the conduit is not damaged, for example by hooves of animals or tractor wheels that can plunge in the ground. Do not use conventional electric cables.
- may not be laid in a tube along with other distributing, communicating 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 „Table No. 3“

Power line voltage	Clearance
≤ 1.000 V	3 metres
>1.000 ≤ 33.000 V	4 metres
>33.000 V	8 metres

Table 3. - **Minimum clearances from power lines for electrical animal fences**

- 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. (see Figure No. 20).

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 enclosure, 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.

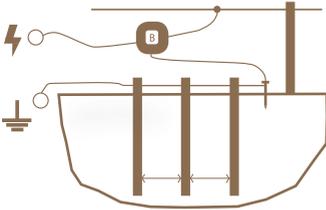


Figure. 21 – **Overvoltage protective equipment with lightning diverter**

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 terminal 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.

Electric fence system must be used in accordance with description mentioned in the instructions for use.

9. TROUBLESHOOTING - POSSIBLE FAULT SOURCES – REDUCTION OF FENCER FUNCTIONALITY

In case that electric fence system does not give pulse or voltage is lower than 3 kV and red diode is blinking on BARGRAPH indicator, it is necessary to check below listed causes.

Cause	Fault removal
Energizer does not work?	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.
Red LED light is blinking	Battery voltage decreased below 12 V - replace the battery with a sufficiently charged one or connect adapter.
Red LED light is blinking and warning siren sounds (beeping)	Battery voltage decreased below 11,6 V - replace the battery with a sufficiently charged one or connect adapter.
No LED signal is burning	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.
Lead-in or short circuit of supply lines of the fence system	Do not use conventional cables for supply lines. High-voltage cable is recommended.
Conductor has adverse properties (thin diameter, high resistance)	Use high-quality conductor with low resistance and larger diameter. Ensure high-quality correct connection of conductors.
Low-quality earthing, too short earth rod, corrosion, dry soil	Add next rod, moisten.
Lead-in via growth near fence system	Remove the growth (mow it).
Conductor on ground (for example break, insufficient mechanical tension)	Repair fencing, use special connectors, stretch conductor.
Too long fence system. Was correct accessories used for given purpose?	Use accessories suitable for given length of fence system and for animals – in case of need, consult specialized salesman.
Insulator pierces, losses occur	Replace defective and weather-worn insulators.
Conductor is connected via knot, insufficient connection	Use relevant special connectors for the conductor.

Table 4. - **Possible fault sources**

10. 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!

Function & benefits all models:



Czech product.



Easy use and comfortable switching thanks to the **ON/OFF button**.



Special **ST transformer**, extra high voltage with long term protection.



Modern **LED diodes** with BrightLight technology offering high luminosity.



Smart Control technology provides **microprocessor controlled** operation and optimum performance.



Very **low and efficient** energy consumption.



The SafeShock technology ensures maximum safety for your animals Specially shaped impulse curve.



On-wall installation is very easy. Practical installation **DIN rail** is one of many accessories available.



fence energizers are **resistant to all climatic conditions**. Rain, direct sunlight and frost.



Complies with European Directive **2014/35/EU - 2014/30/EU**



3 years warranty.

power DUO PD / power DUO RF PDX models:



Battery management
Checking and managing the battery status.



Power Switching
Manual switching between high and low power. Optional for the user to save battery when needed.



Time delay 50 s
Increase power to maximum power for safety reasons.
Only **power DUO PD70** | **power DUORF PDX70**



Transmitter range **up to 10 km**.



Current information about the fence.



Combined power supply
Power supply is possible from a 230 V network using an adapter or from a conventional 12 V battery, also usable as a backup supply.



LED Bargraph
Visually gives information about the state of the fence.



Alarm signalling.



NO SIM Card needed.

energy DUO ED models:



EXTREME POWER
Powerful performance for any fence.



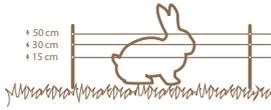
Setting buttons
Simple and easy to use and setting.



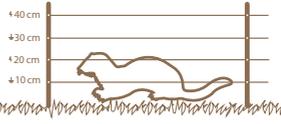
LCD Display
Large graphic display with all information about the fence.

RECOMMENDED INSTALATION OF CONDUCTORS

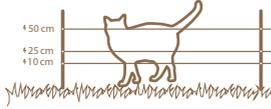
Rabbit - Hare



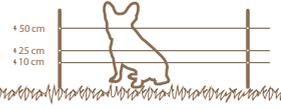
Marten



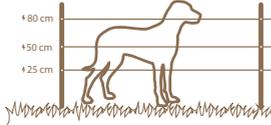
Cat



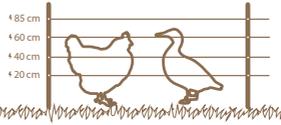
Small dog



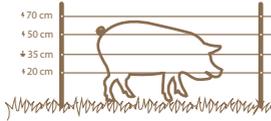
Large dog



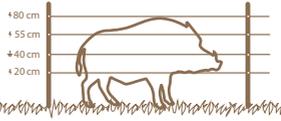
Poultry



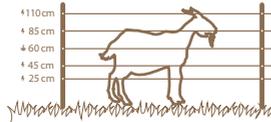
Pig



Wild pig



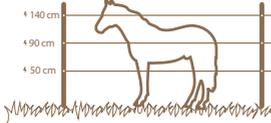
Goat



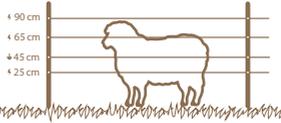
Game



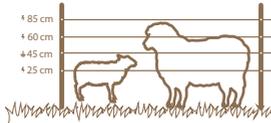
Horse



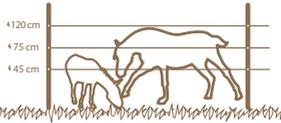
Sheep



Sheep with lamb



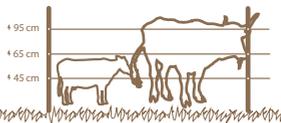
Horse with foal



Cattle



Cattle with calf





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Respect. 
Care. Innovation.

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