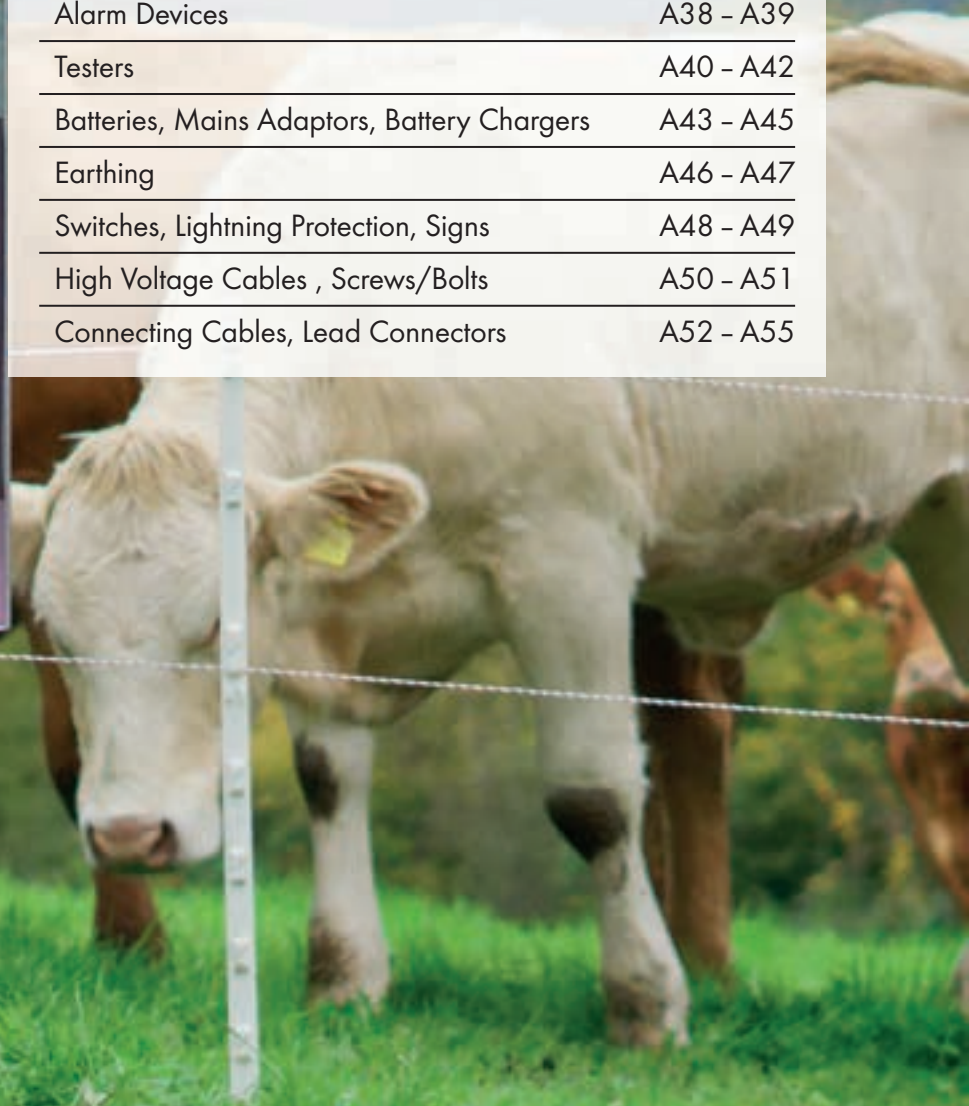
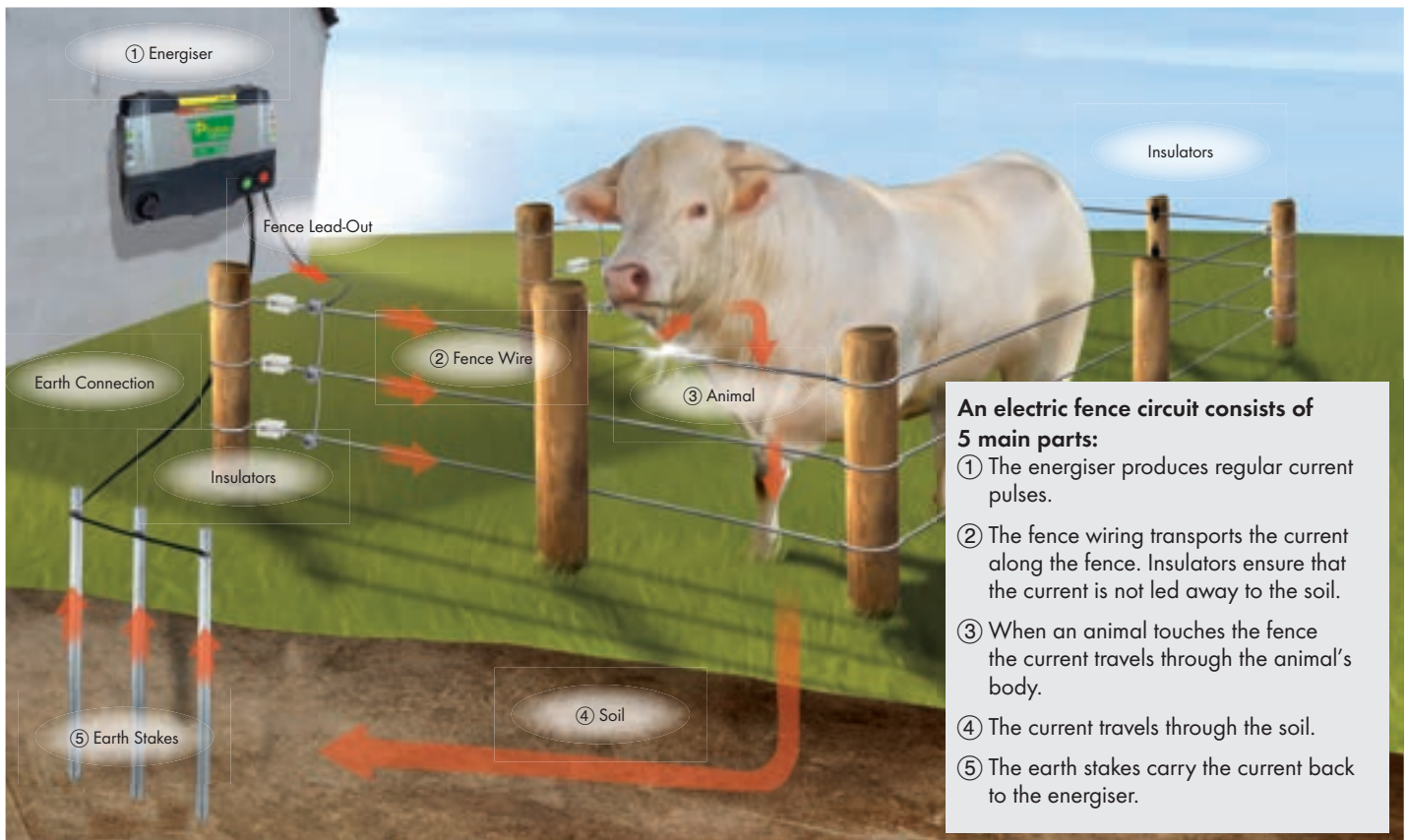


Energisers

Basic Information on Electric Fencing	A2 - A3
Energiser Selection	A4 - A5
Electric Fences for every type of animal	A6 - A7
Energisers	A8 - A9
9 Volt Battery Energisers	A10 - A13
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High Voltage Cables , Screws/Bolts	A50 - A51
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What does an electric fence system consist of?

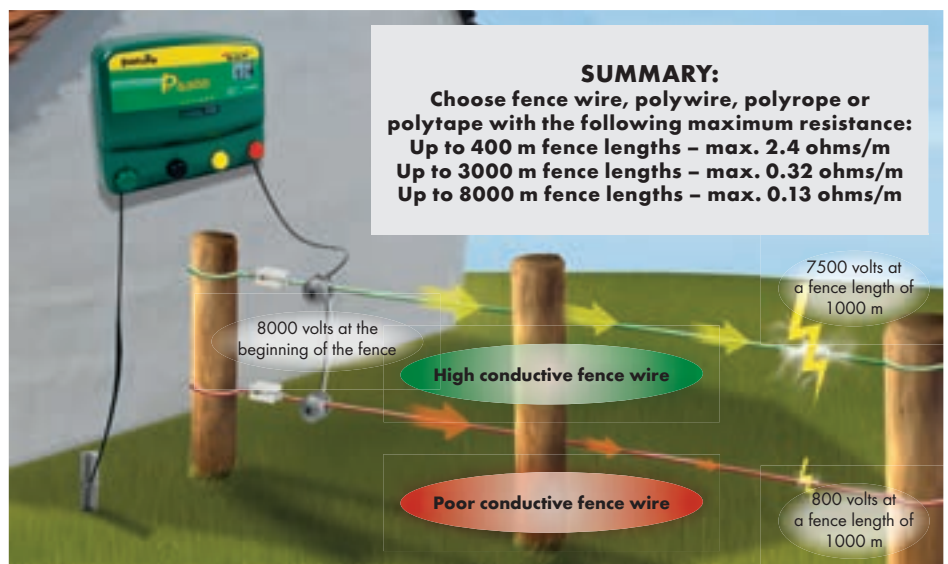
The principle on which the electric fence works – and what differentiates it from other fences – is the animals' reaction to the electric shock they receive when touching the fence. The electric shocks are not dangerous to either humans or animals, but nonetheless make them afraid of coming into frequent contact with the fence. This works in respect of all types of wildlife – both in containing animals as well as in protecting against them.

Three factors decide on the optimal function of your electric fence



1. Conductivity of the fence wiring

Long lengths of electric fence can only function using fence wiring with good conductivity. When using 4 wires of 2.5 mm steel, fences up to 120 km can be considered when there is no vegetation. Using only one wire of the same, the maximum length drops to 30 km. If you go down to one compact-polywire that has 6 x Ø 0.20 mm stainless steel strands, the maximum length of fence goes down to 250 m. If there is vegetation at the fence, then these figures drop considerably. Depending on the desired fence length and the anticipated vegetation level the fence wire must be selected carefully. Please refer to section "Fence Wires, Polywires, Polyrope, Polytape" for more information.

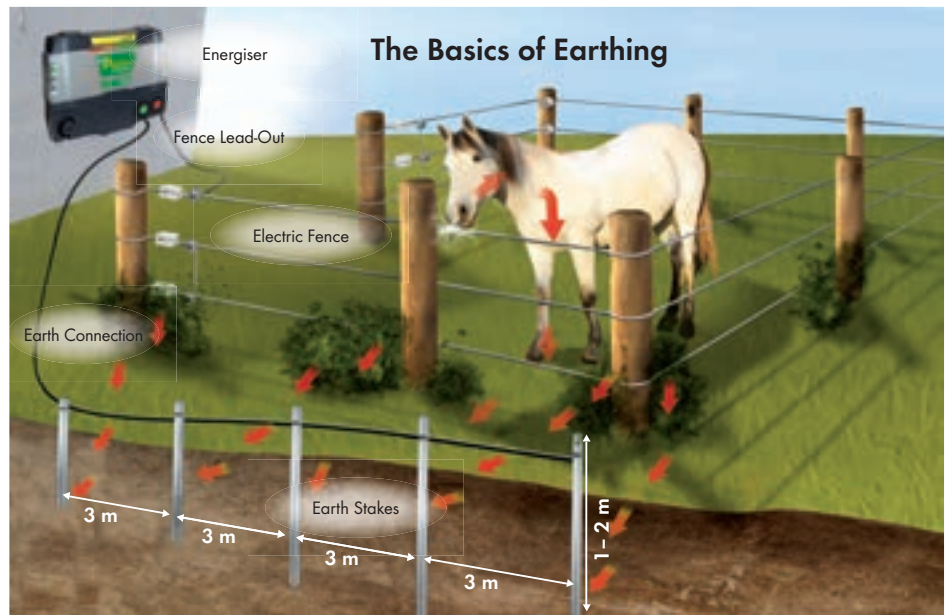


In longer fence lengths, only high conductivity fence wires ensure maximum performance to the end of the fence.

2. Earthing

An electric fence is a circuit in which current flows. The current which travels through the wire, the animal and through the ground cover into the soil, needs to flow back to the energiser with the help of earth stakes. As the soil is a poor conductor, particularly when it is dry, sandy or stony, it is important to ensure an adequate earth system, so that the energiser can reach its full performance.

- 1 For permanently installed mains and battery energiser, 3 earth stakes of 1-2 m in length are generally sufficient.
- 2 For portable battery energisers there should be at least one earth stake of 1 m in length. Additional stakes are recommended in dry conditions.
- 3 Ensure that all connections are made using screws.
- 4 All parts of the earth system should be hot-dip galvanised – i.e. rust proofed!
- 5 Check the earthing of your energiser regularly.



This is a typical earth system for mains energisers. Check carefully for correct earthing, as over 80 % of installed earth systems are inadequate. Please note the recommendations for the number of earth stakes in the tables for the particular energisers.

SUMMARY:
The standard earth system for energisers from 1 to 5 joules:
Drive 3 galvanised earth stakes of 1 m length into the soil 3 m apart and connect them with screws and high voltage cable.

3. The Energiser

An efficient energiser is the foundation of the basic power supply to your electric fence. The output power of an energiser is specified in joules.

Four factors play a crucial role when deciding which energiser to use:

- ① Vegetation load on the fence
- ② Fence length or number of wires
- ③ Type of animal
- ④ Power supply 9 V / 12 V or 230 V

You will find detailed advise regarding the selection of an energiser in the tables for the particular energisers.

SUMMARY: Minimum power requirement depends on fence length and vegetation level:
Up to 500 m no vegetation – min. 0.25 joules
Up to 1000 m normal vegetation – min. 2.0 joules
Up to 1000 m heavy vegetation – min. 6.0 joules



0.33 joules / 9 volts



1.0 joules / Solar 12 volts



1.1 joules / 12 volts



3.8 joules / 12 + 230 volts



6.0 joules / 12 + 230 volts



15.0 joules / 230 volts

The right energiser for my fence

In order to simplify the choice of an energiser in any particular circumstance, we have developed the following selection schematic. It allows you, on the basis of a few basic inputs such as fence length, type of animal and the intensity of the vegetation, quickly and accurately to choose the correct energiser. You will find an easy-to-operate variant of it on the Internet in the form of the PATURA Fence Calculator.

Vegetation

The decisive role in the selection of an energiser is played by the vegetation conditions at the fence. The high output energy of the PATURA energisers is used primarily to destroy heavy vegetation at the fence and, despite this vegetation, to maintain a high voltage level at the fence. These are the various vegetation conditions:



No vegetation – no contact between the vegetation and the fence wire



Light vegetation – the vegetation occasionally touches the fence wire



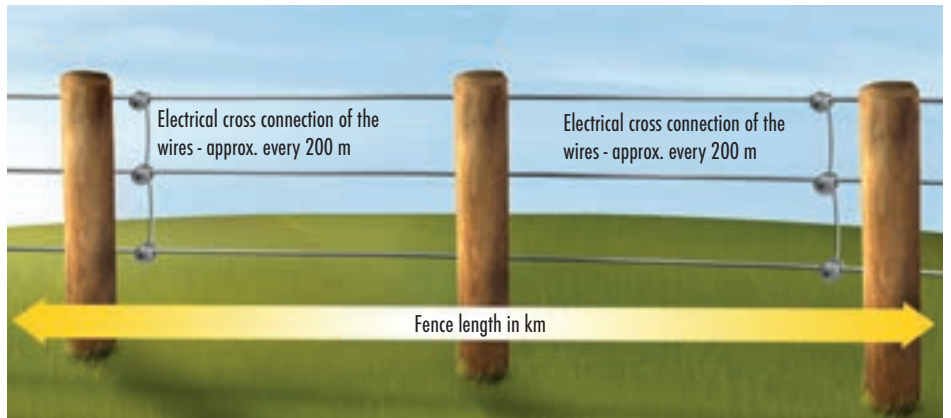
Normal vegetation – the vegetation is continuously touching the wire



Heavy vegetation – the wire runs completely in vegetation

Fence Length

After the vegetation, the length of the fence plays the next most important role in the selection of equipment. By fence length we mean not the total length of the individual wires added together, but simply the length of the actual fence itself. Multi-wire fences carry more advantages in their operation with modern energisers than the ones with single wires. Multi-wire fences carry the current better than single strand ones, providing that the wires are connected to each other at regular intervals.



By fence length we always mean the simple length of the fence itself.

Animal Type

The type of animal plays an important role in the selection. With animals that are difficult to contain, such as wild animals, sheep, goats and fowl, powerful equipment should be used. With more easily contained animals, such as cattle, horses, pigs and domestic animals, less powerful equipment is needed for the equivalent length of fencing.

For recommended maximum fence length please refer to the tables for the particular energisers.



Animals that are easy to contain



Animals that are difficult to contain

The Power Source

Various power sources are available for powering energisers:

- 230 volts AC from the power outlet
- 12 volts DC from a rechargeable battery
- 12 volts DC from solar cells + battery
- 9 volts DC from non-rechargeable batteries

There are many reasons for choosing an energiser with a mains connection, should such a connection be available: the acquisition price of the energiser is relatively low, the energy costs are extremely low, and the ease of operation is very high. If there is no mains supply available, then the next best alternative is an equipment with a 12 volt battery connection. The energy costs are still justifiable, but the maintenance requirement for the recharging of the batteries is nonetheless considerable. In

order to minimise this requirement – at least in the spring to autumn period – we recommend the use of solar panels, especially so with the more powerful 12 volt energisers. The most expensive alternative for powering energisers is the use of 9 volt non-rechargeable dry batteries which also have to be disposed as special waste when exhausted. The advantage with these energisers is that they are easy to use, but their low power is a disadvantage.

PATURA Fence Calculator

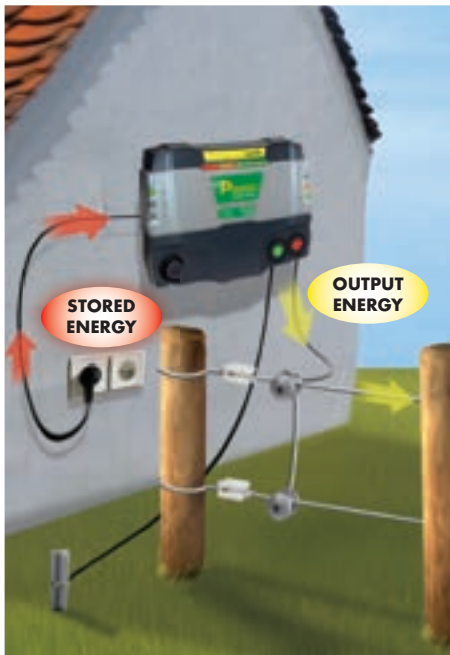
Find the right energiser quickly

By using the new PATURA Fence Calculator, you can very easily determine which of the energisers is specially attuned to your requirements. Just set the easy-to-move push bars (or use the mouse wheel) to the most important parameters, such as power source, type of animal, fence length and level of vegetation and you will be shown the optimum energiser recommendation, as well as detailed technical information on its performance.

Find the right energiser quickly!

Ref.: 145602
Stored energy (joules): 20
No-load voltage (volts): 9800
Max. output energy (joules): 15
Voltage at 500 ohms (volts): 7500

[Data sheet](#) [Print PDF](#)



It is the output energy at the fence that is decisive – not the stored energy.

Voltage at the electric fence

PATURA energisers excel in showing a constant high voltage even when the fence is loaded by (e.g.) vegetation. Using a digital voltmeter, you yourself can check the advantages that PATURA energisers will give. What is decisive is a high voltage supply over more or less the entire operating range of the equipment, thus maintaining the same high deterrent effect on the animal even in extreme situations. Extremely high voltages at the fence, particularly under no-load conditions, provide no advantages in respect of effective animal control, and have disadvantages with respect to losses – particularly where there is poor insulation.

What is a strong energiser?

Two important parameters are sufficient to define an energiser's performance:

1. Output energy (in joules):

This is the maximum energy of a pulse supplied by the energiser to the fence. The higher the output energy, the stronger the electrical pulse to the animal, and the lighter the destruction of vegetation.

- Energisers with low output energy (under 0.5 joules) are suitable for types of animal that are easy to contain and short fences that have no, or only little vegetation.
- Energisers with medium output energy (1 to 5 joules) are suitable for animals that are difficult to contain, and above all for fences which have a normal vegetation.
- Energisers with high output energy (over 5 joules) have been developed specially for long fences with heavy vegetation.

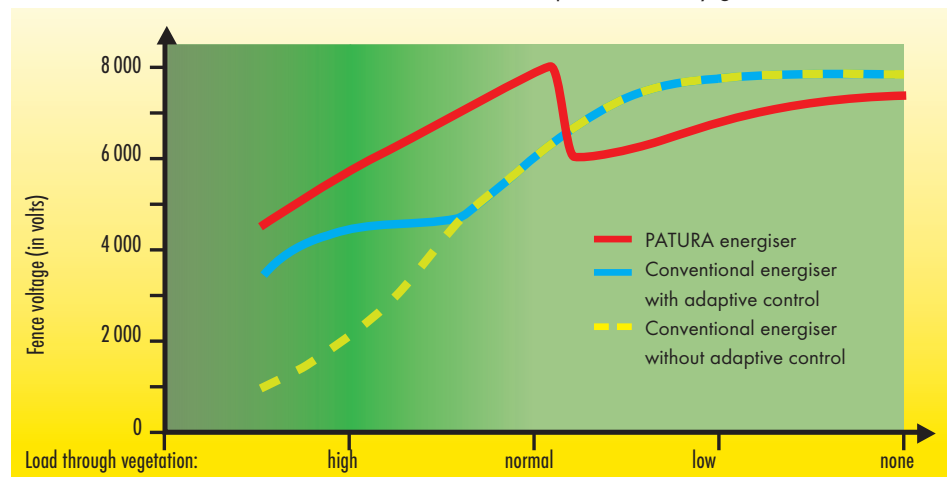
Output energy =

Pulse power at the fence

Stored energy is that energy which the unit receives from the battery or mains, and stores internally.

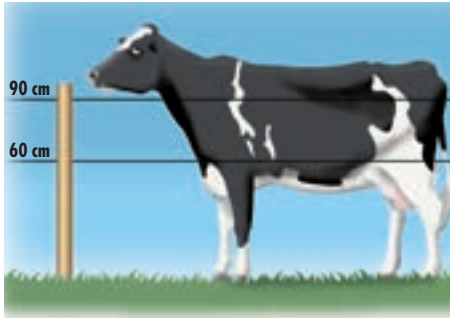
2. Voltage under load (in volts):

International standards require that for effective animal control a voltage of at least 2000 volts must be available in a fence. In practice, PATURA recommends a fence voltage of 3000 - 4000 volts. It is not the voltage that the energiser offers under no-load conditions, but the voltage under load. PATURA quotes voltage figures under a load of 500 ohms which corresponds to normal growth and/or animal contact and also under a load of 100 ohms which corresponds to heavy growth.



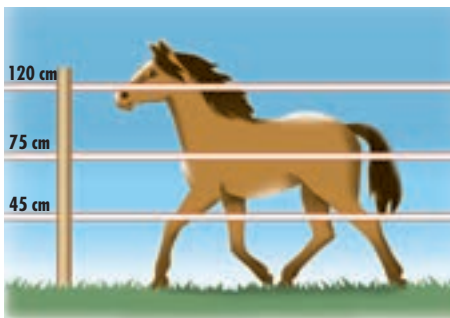
Voltage curve of a PATURA energiser compared with traditional energisers. PATURA energisers have a markedly higher voltage especially where there is vegetation at the fence.

Cows



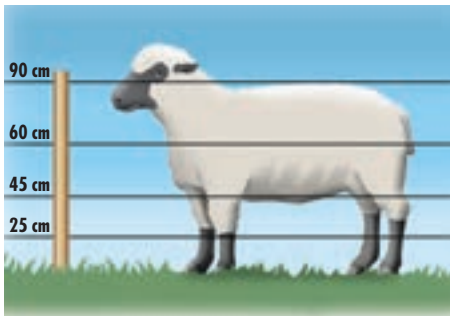
Electric fences for cows are 0.85 to 1.05 m high with 1 to 2 wires.

Small Horses



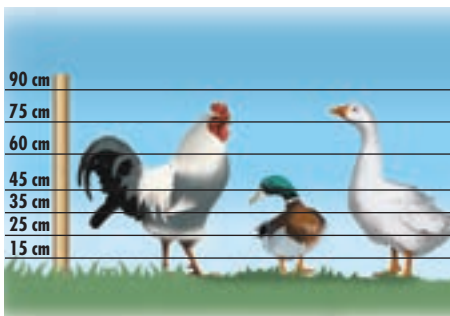
Electric fences for small horses and ponies are 1.05 to 1.30 m high with 2 to 3 wires.

Sheep



Electric fences for sheep are 0.90 to 1.05 m high with 4 to 5 wires.

Poultry



Electric fences for poultry are according to their flying ability 0.60 to 0.90 m (even to 1.20 m) high with 5 to 7 wires.

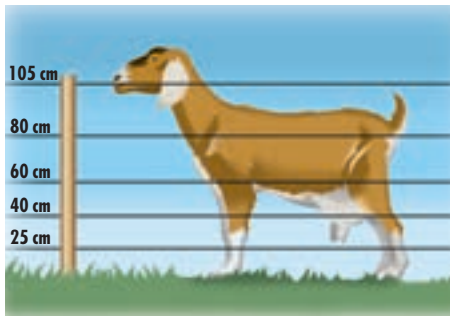
The electric fence – the best alternative for containing every type of animal

Electric fences are suitable for containing or deterring just about all kinds of animal. The fences differ only in their height, the number of wires and partly in the fence material. Whether the fence is to be an outer fence or a subdivision also plays a role. On these pages you will find the information on outer fence construction with respect to the quantity and height of wires for the most important types of animal. For inner fences the heights can be selected as some 10 to 15 cm less, and one wire fewer can possibly be used. We will be pleased to advise you on any containment fencing questions.



Send in a plan showing your intended fence. We will send you a non-binding offer.

Goats



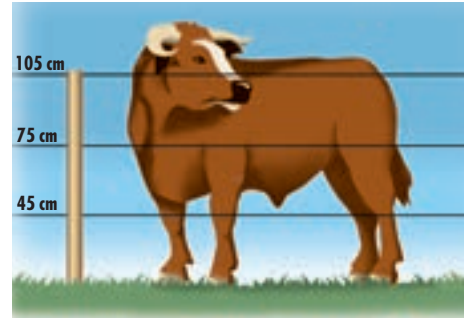
Electric fences for goats are 1.05 to 1.20 m high with 4 to 6 wires.

Keeping cats/small dogs in or out



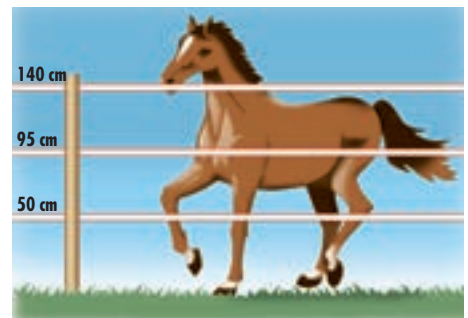
Electric fences for cats and small dogs are 0.55 to 0.75 m high with 3 to 4 wires.

Beef + Dairy Cattle



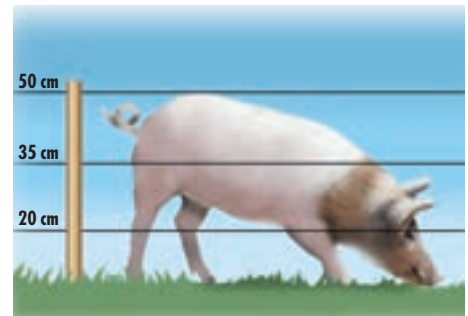
Electric fences for beef and dairy cattle are 0.85 to 1.05 m high with 2 to 3 wires.

Large Horses



Electric fences for large horses are 1.30 to 1.60 m high with 2 to 3 conducting wires.

Pigs



Electric fences for pigs are 0.50 to 0.75 m high with 2 to 3 wires. Outer fences for domestic pigs should have a second fence to protect against wild animals!

Keeping large dogs in or out



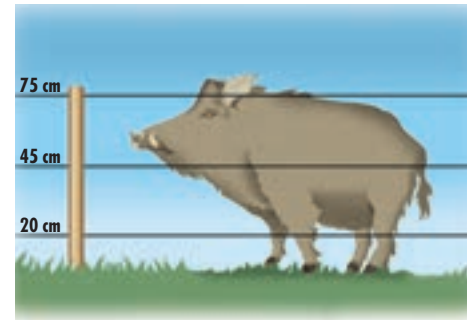
Electric fences for large dogs are 0.85 to 1.05 m high with 2 to 4 wires.

Containing or excluding animals

As matter of principle in the application of electric fences, we need to decide whether the animals that need to be controlled are to be contained by the fence or excluded by it. In principle, containing animals is easier than excluding them. Animals that are contained, quickly get used to the fence and can be relied upon to respect it. In excluding animals, we have to consider that animals approaching the fence have no previous

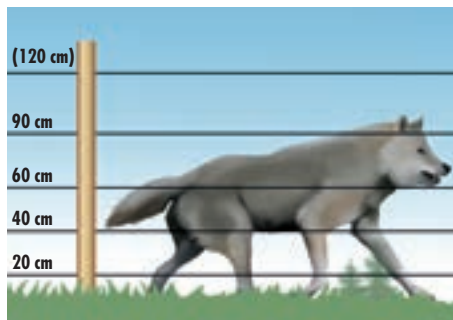
experience of it. In this case we need to ensure that initially the animal receives a strong and memorable electric shock, and adjusts itself by giving the electric fence the necessary respect. Thus for exclusion fences, only especially powerful energisers should be used.

Excluding wild boar



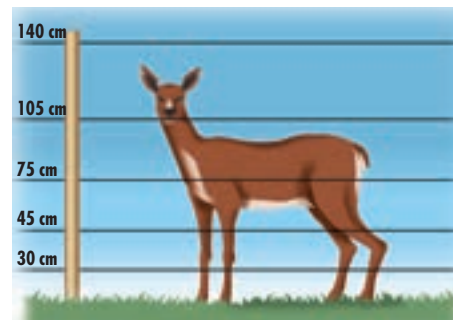
Electric fences for protecting against wild boars are 0.55 to 0.75 m high with 2 to 3 wires.

Excluding wolves



Electric fences for protecting against wolves are up to 1.20 m high with 4 to 5 wires.

Excluding roe-deer



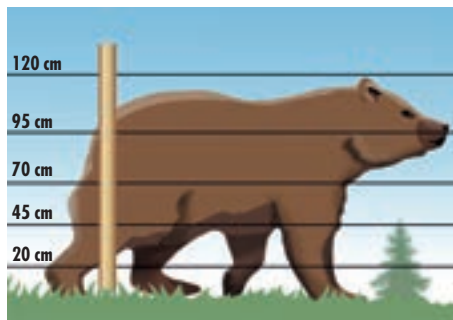
Electric fences for protecting against roe-deer are up to 1.40 m high with 5 to 6 wires.

Excluding red deer



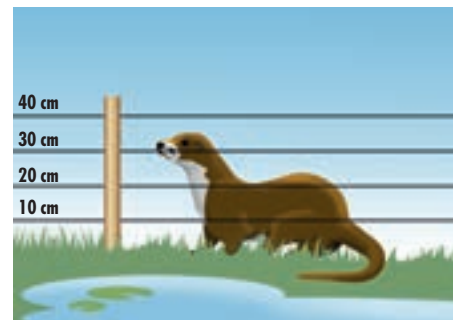
Electric fences for protecting against red deer are up to 1.50 m high with 5 wires.

Excluding brown bears



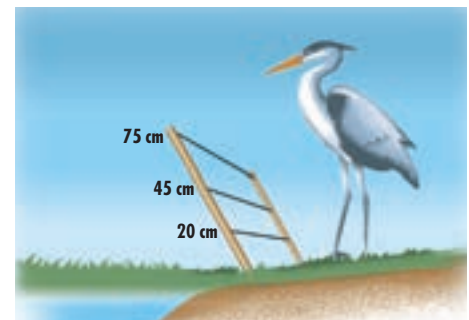
Electric fences for protecting against brown bears are approx. 1.20 m high with 5 wires.

Excluding otters



Electric fences for protecting against otters are 0.4 m high with 4 wires.

Excluding herons



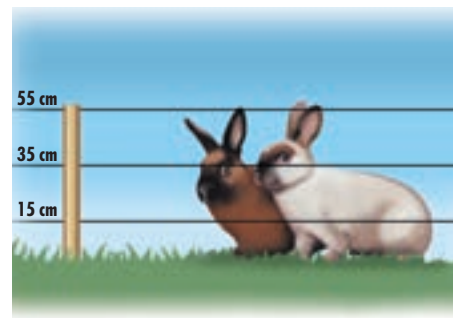
Electric fences for protecting against herons are approx. 0.75 m high with 2 to 3 wires. On a shallow shoreline the fence should be canted towards the water surface.

Excluding martens and raccoons



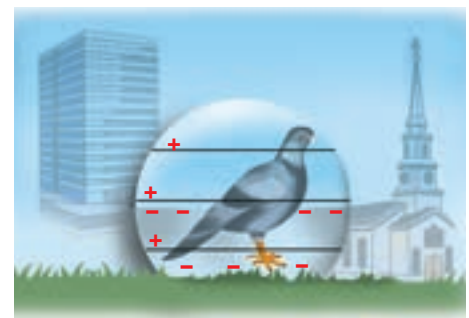
Electric fences for protecting against martens and raccoons consist of at least 2 wires that are placed close to each other and are connected alternately to the plus- and minus-pole of the device.

Excluding rabbits



Electric fences for protecting against rabbits are approx. 0.55 m high with 3 wires. With rabbits, in order to prevent them digging under the fence, it may be necessary to lay an earthed wire directly on the ground. The fence should be slightly canted towards the animals.

Excluding pigeons



Electric fences for protecting against pigeons on building frontages consist of 1 to 3 wires which are laid on a conducting, earthed surface.

PATURA Energisers

PATURA Energisers convince with their high performance, especially when there is heavy vegetation on the fence. No matter if 9, 12 or 230 volts device. The energisers can be split into three categories: Compact, Professional and ProfessionalPlus.

PATURA offers maximum performance at the best possible price-performance ratio for the Compact and Professional devices. The high-end devices of the ProfessionalPlus series are equipped with many special technical features that offer you every comfort:

Fully encapsulated electronics

The sensitive electronic components on the printed circuit boards are potted with a special, highly elastic and 100 % water proof compound. This provides an effective protection against moisture, water, battery fumes, insects and bucks. The main source for defective electric fence energisers is thus eliminated.



Digital display, earth monitoring and remote control

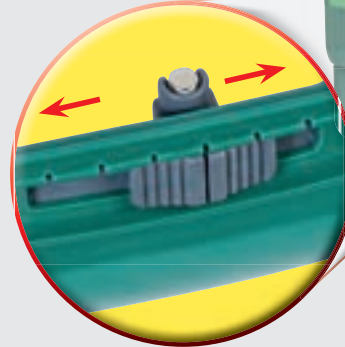
PATURA energisers of the ProfessionalPlus series have a wide range of control displays. All control lamps are designed in form of highly efficient high-performance LEDs. These are also visible in full sunlight.

The most powerful devices also have a digital display (except P8000), which indicates the output voltage, the battery charge level or the earth monitoring. In addition, the P4600, P6000 and P8000 can be controlled via a remote control.



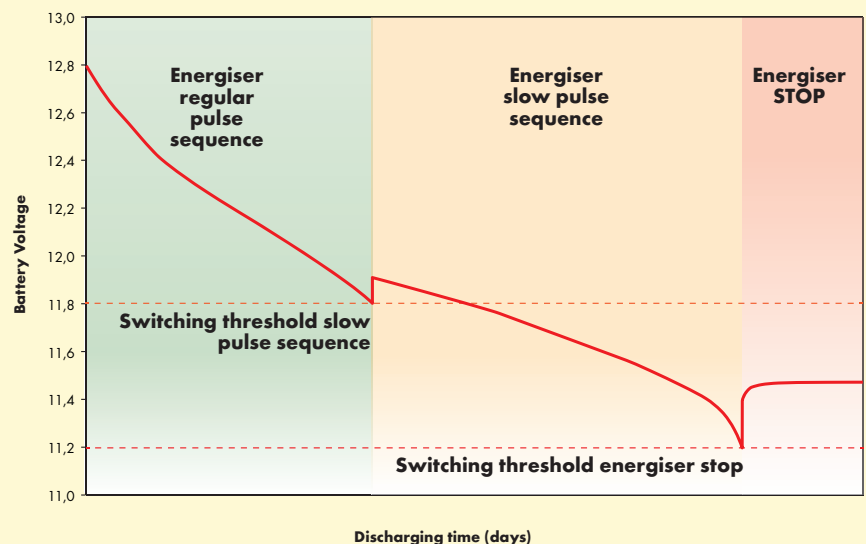
Multi-stage magnetic switch

This switches the various device functions contactlessly through the housing wall. No hole through the housing is required. The magnetic switching contacts are completely closed components and therefore there's no corrosion. Due to the various switching modes, the performance of the device can always be optimally adapted to the animals that need to be protected (e.g. day or night active animals) and to current fence conditions (fence length and vegetation). Thus the capacity of the batteries can be used in the best possible way.



Deep discharge protection

All PATURA energisers for 12 Volt battery operation have a deep discharge protection. This reliably prevents deep discharge and thus damage or even destruction of the battery. If the battery is severely discharged, the device switches to a power-saving mode. At the same time, the battery control light changes from green to red. If the operator continues to ignore this warning and does not recharge the battery, the device switches off completely after a certain time.



PATURA Energisers		Energiser				Energiser series		Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)				Max. fence length in km (multiple wires)	Catalogue page
		Compact	Professional	ProfessionalPlus	Stored energy (joules)	No vegetation	Little vegetation			Normal vegetation	Heavy vegetation	Max. no. nettings (0.5 Ohms)			
	P 10	•			0.05	0.04	5800	1000	0.8	0.2	-	-	-	A13	
	P 30	•			0.16	0.12	7700	1900	1.2	0.4	-	-	-	A13	
	P 15	•			0.20	0.15	8200	2500	1.3	0.4	-	-	-	A13	
	P 50	•			0.39	0.30	9400	2800	2.8	1.3	-	-	-	A13	
	P 20		•		0.22	0.17	8400	2600	1.4	0.5	-	-	-	A11	
	P 40		•		0.29	0.23	8700	2800	1.9	0.75	-	-	-	A11	
	P 250			•	2.6	2.0	10500	6300	15	10	5	1.5	6	A17	
	P 350			•	4.6	3.5	10100	6800	24	16	8	3	12	A17	
	P 450			•	6.5	4.8	10500	7000	28	20	9	4.5	16	A17	
	P 100	•			0.60	0.45	7900	4300	5	3	2	-	-	A15	
	P 200	•			1.5	1.1	9600	5400	10	5	3	1	4	A15	
	P 300	•			2.4	1.7	9900	5700	15	10	5	1.5	6	A15	
	P 1		•		0.70	0.50	8300	4400	5	3	2	-	-	A21	
	P 2		•		1.4	1.0	9800	5300	10	5	3	1	4	A21	
	P 3		•		2.7	2.0	11000	5900	15	10	5	1.5	8	A21	
	P 4		•		4.5	3.0	11400	6200	20	15	7.5	2.5	12	A21	
	P 5		•		6.3	3.8	11000	6300	25	17	8.5	3	15	A21	
	P 1500			•	1.4	1.0	9800	5300	10	5	3	1	4	A23	
	P 2500			•	2.7	2.0	11000	5900	15	10	5	1.5	8	A23	
	P 3500			•	4.5	3.0	11400	6200	20	15	7.5	2.5	12	A23	
	P 3800			•	6.3	3.8	11000	6300	25	17	8.5	3	15	A23	
	P 4500			•	9.0	6.0	9500	6800	30	25	10	5	25	A25	
	P 4600			•	9.0	6.0	9500	6800	30	25	10	5	25	A25	
	P 5000		•		14	10,7	9600	7300	40	35	18	8	35	A26	
	P 6000			•	20	15	9800	7500	48	35	18	8	40	A27	
	P 1000	•			0.75	0.45	9700	4700	5	3	2	-	-	A19	
	P 2000	•			1.5	1.1	9900	5400	10	5	3	1	4	A19	
	P 3000	•			2.7	1.8	9200	5600	15	10	5	1.5	6	A19	
	P 4000	•			5.8	3.2	9900	6100	23	15	8	3	10	A19	
	P 8000 Tornado Power			•	21	15	8200	7200	100	65	30	15	60	A28	
	P 25		•		0.11	0.08	7300	2100	1	0.3	-	-	-	A37	
	P 35		•		0.21	0.15	9300	2600	1.6	0.6	-	-	-	A37	
	P 70			•	0.65	0.50	9800	4800	5	3	2	-	-	A37	
	P 140			•	1.3	1.0	9600	5600	10	5	3	-	4	A37	

Most modern technology with the optimum price to performance ratio

The compact, easy-to-handle 9 V energisers are used mainly for temporary fence installations, strip grazing where there is a frequent change of area, and for smaller numbers of 'hobby' animals.

A cost and environmental advantage: All PATURA 9 V battery energisers can be connected to a rechargeable 12 V battery.

Solid fence output and fence earth terminals

Complete enclosed electronic circuit

3-step fence and battery monitors

Rotary switch with 6 settings



Including post = earth stake (P 40 / P 60)

PATURA P60 – Convincing in all details

- Easy operation
- Convenient rotary switch
- 2 power levels
- Slow mode
- Night save mode
- 3-step fence and battery monitors

Switching options on the PATURA P 60

Half / Full power:

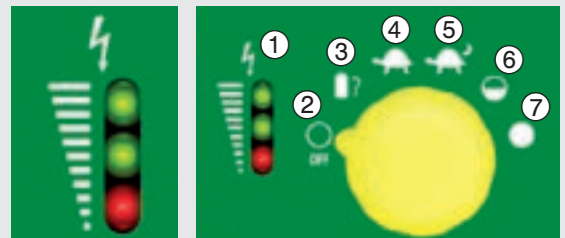
- To get the animals used to the system, always switch to "full power." When there is little vegetation and sufficient fence voltage, "half power" can be used.

Slow mode:

- To get the animals used to the system, always leave it on "full power." For cattle and horses it can later be switched to "slow mode."

Night save mode:

- "Slow mode" for cattle at night.



- ① Fence/battery voltage indicator
- ② OFF
- ③ Battery test
- ④ Slow mode
- ⑤ Night save mode
- ⑥ Half power
- ⑦ Full power

Fence voltage indication:

On switch position ④ to ⑦ the indicator lights flash with each pulse

Top green light: Fence voltage above 5000 volts (optimum)

Middle green light: Fence voltage 2500 - 4900 volts (satisfactory)

Bottom red light: Fence voltage below 2500 volts (insufficient)

Battery voltage indication:

On switch position ③ the indicator lights are permanently lit

Top green light: Battery voltage above 7.1 volts

Middle green light: Battery voltage between 5.5 and 7.0 volts

Bottom red light: Battery voltage below 5.5 volts

9 Volt Battery Energisers														Max. fence length in km (multiple wires)		Minimum length of earth stake in metres					
Ref.	Stored energy (joules)	Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)	Max. power consumption at 9 V (mA)	Supply voltage (volts)	No vegetation	Little vegetation	No vegetation	Little vegetation	Wildlife	Herd protection	Max. no. nettings (40.5 Ohms)	Single indicator	3-step fence and battery monitor	Connection to 9 and 12 V (F with separate 12 V cable)	Switch for 2 speeds and 2 power levels	Night save mode	Deep discharge protection	0.25	
P 20	141220	0.22	0.17	8400	2600	24	9 - 12	1.4	0.5	0.7	0.25	-	-	-	•	-	-	•	-	0.25	Only perfect earthing allows maximum power on the fence
P 40	141420	0.29	0.23	8700	2800	15 - 29	9 - 12	1.9	0.75	0.9	0.35	-	-	-	•	•	•	•	•	0.25	
P 60	141620	0.43	0.33	9600	2900	24 - 45	9 - 12	3.0	1.5	1.5	0.75	-	-	-	•	•	•	•	•	0.25	

Further information can be found in section "Energiser Selection" (pages A4/A5)

Particularly in dry subsoil conditions, we recommend the use of a supplementary earth stake (Ref.161700) in addition to that provided with the energiser.

**3 year
WARRANTY**



P 20

Great value amongst PATURA energisers for 9 V dry-cell batteries; ideal for small cattle and horse pastures; user-friendly switch; single indicator light, incl. fence and earth cable and earth stake
Stored energy: 0.22 joules

141220



P 40

The all-round PATURA energiser for 9 V dry-cell batteries; ideal for cattle and horse pastures with no or little vegetation; battery test, slow pulse sequence, night save mode; half / full power; incl. fence and earth cable and stand = earth stake
Stored energy: 0.29 joules

141420



P 60

Our most powerful energiser using 9 V dry-cell batteries; high performance for effective animal control even under load conditions at the fence; battery test, slow pulse sequence, night save mode; half / full power; incl. fence and earth cable and stand = earth stake
Stored energy: 0.43 joules

141620



For optimal function we recommend the use of alkaline batteries for all 9 V energisers

All 9 V energisers are also suitable for 12 V operation



12 V Lead Set

For connecting all PATURA 9 V dry-cell battery energiser to 12 V battery or mains adaptor (to connect to mains adaptor remove spring clips).

159101

Our robust 9 V Energisers for greatest value for money

The compact and low-weight 9 V energisers are used mainly for temporary fence installations and strip grazing where there is a frequent change of area.

Furthermore the easy-to-handle and reliable functions are ideal for smaller numbers of 'hobby' animals.

A cost and environmental advantage: All PATURA 9 V energisers can be connected to a rechargeable 12 V battery.



1 Combined indicator light for fence voltage and battery condition



- Indicator light illuminates green for two seconds when energiser is first switched on: Battery voltage is OK
- Indicator light flashes green once every 1.5 seconds: Energiser is operating and the energiser output voltage is OK
- Indicator light illuminates red for two seconds when energiser is switched on: Battery voltage is low
- Indicator light flashes red once every 1.5 seconds: Energiser is operating but the energiser output voltage is low
- Indicator light flashes red rapidly for four seconds: Energiser fault. There will be no output voltage delivered to the fence.

2 3 Easy-to-handle and robust



These energisers are ideal for daily rough practical conditions. The advantages with these energisers are many details such as waterproofness, a magnetic rotary switch and stabil lead connectors.



For optimal function we recommend the use of alkaline batteries for all 9 V energisers

Ref.	Stored energy (joules)	Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)	Max. power consumption at 9 V (mA)	Supply voltage (volts)	No vegetation				Little vegetation				Wildlife				Herd protection (heavy vegetation)				Max. fence length in km (multiple wires)	Single indicator	Connection to 9 and 12V (* with separate 12V cable)	Switch for 2 speeds	Switch for 2 power levels	Deep discharge protection	Minimum length of earth stake in metres	
							0.8	0.2	0.4	0.1	1.3	0.4	0.65	0.2	-	-	-	-	-	-	-	-								-
P 10	140700	0.05	0.04	5800	1000	14	3	0.8	0.2	0.4	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	Only perfect earthing allows maximum power on the fence
P 15	141100	0.20	0.15	8200	2500	24	9-12	1.3	0.4	0.65	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	
P 30	140800	0.16	0.12	7700	1900	15-27	6-12	1.2	0.4	0.6	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	
P 50	141500	0.39	0.30	9400	2800	44	9-12	2.8	1.3	1.4	0.65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	

Further information can be found in section "Energiser Selection" (pages A4/A5)

Particularly in dry subsoil conditions, we recommend the use of a supplementary earth stake (Ref. 161700) in addition to that provided with the energiser.

**3 Jahre
GARANTIE**

**All 9 V
energisers
are also
suitable for
12 V
operation**



P 15

Greatest value for money amongst PATURA 9 V energisers; ideal for small cattle and horse pastures; indicator for fence voltage and battery condition; waterproof, magnetic rotary switch; incl. fence and earth cable and earth stake
Stored energy: 0.20 joules

141100



P 50

The value for money and powerful 9 V energiser; ideal for cattle and horse fences even under load conditions at the fence; indicator for fence voltage and battery condition; waterproof, magnetic rotary switch; incl. fence and earth cable and earth stake
Stored energy: 0.39 joules

141500



P 10

Energiser using 2 x 1.5 V internal batteries size D; clips directly onto the fence wire; the ideal energiser for small fences.
Stored energy: 0.05 joules

140700



P 30

Energiser using 4 x 1.5 V internal batteries, size D or 12 volt battery; 12 V lead set included; the ideal energiser for small horse paddocks, for trekking and for domestic animals.
Stored energy: 0.16 joules

140800



12 V Lead Set

For connecting all PATURA 9 V dry-cell battery energiser to 12 V battery or mains adaptor (to connect to mains adaptor remove spring clips).

159101

Trekking Kit

The paddock that can travel everywhere with you; the set contains: P30 energiser, 4 collapsible aluminium posts, 5 metal tent pegs, 5 bungee cords, 4 insulators, 1 gate handle, 40 m polytape, 1 waterproof carry case;
Pack size: approx. 45 cm x 17 cm x 10 cm
Weight: 2.75 kg (incl. batteries)

**Extremely
light,
only 2.75 kg
(incl.
4 batteries)**

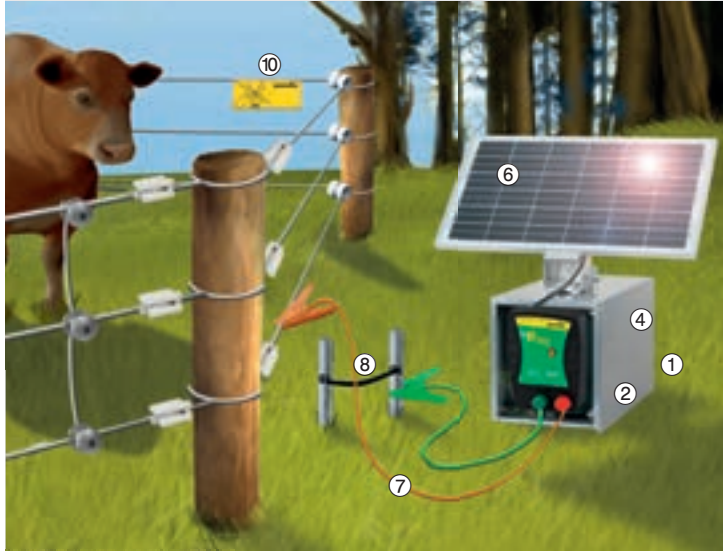


154000

The perfect installation of your PATURA mains energizer

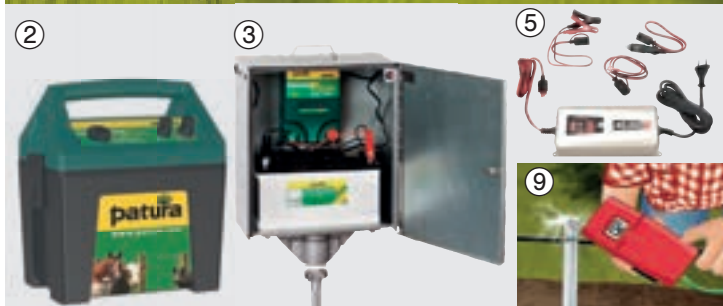
We use battery energisers for pastures with longer distances (> 500 m) to a 230 V main supply.

Generally, a battery energiser is installed in close proximity to the fence. As the batteries have to be recharged regularly, it is important to have an easy access. However, an area that is difficult to see is favorable (theft protection). It is necessary to make sure that everything is earthed properly after each relocation.



If you consider the following points then you will have a reliable battery energiser over a long period:

- ① A suitable location to install your battery energiser is in close proximity to the fence.
- ② We recommend using the MaxiBox or a carry box to protect battery and energiser from wind and weather.
- ③ For reliable anti-theft protection of energiser and battery, we suggest to use our safety box (P1500 - P4600).
- ④ In order to have an operating time of 8 - 14 days please use a battery with a sufficient capacity. We recommend to use a leakproof and maintenance free glass mat battery.
- ⑤ For recharging we recommend a high-quality automatic battery charger. The use of an additional, removable battery is reasonable.
- ⑥ By using correct dimensioned solar installations, the battery runs, maintenance free, from spring to autumn without external recharging.
- ⑦ With all battery energisers we offer a fence connecting cable for reliable connection to the fence.
- ⑧ Install your earthing system in close proximity to the energiser, at a location where the ground stays wet throughout the year.
- ⑨ Check your earthing system at the time of installation.
- ⑩ Mark your fence by placing suitable warning signs.



Detailed references to different sections can be found in the following chapter equipment accessories.

How long does a battery in a 12 V energiser last?

- Note the battery capacity (given in Ah) on the battery identification plate: e.g. 80 Ah
- Ascertain the usable capacity of your battery; this is 65 % in a new battery (this reduces with increasing age)
e.g. $80 \text{ Ah} \times 65 \% = 52 \text{ Ah}$
- Note the current drawn from the following table, or from the identification plate of your energiser: e.g. P200 : 0.110 A
- Calculate the operating life in hours (hrs) before recharging:
capacity/current consumption. e.g. $52 / 0.110 = 473 \text{ hrs}$. Thus, the operating life is 473 hrs or 20 days (473 hrs at 24 hrs per day)



Set P 100 with Solar Panel 5W

Great value set for short fences.
P100 with carry box Compact with 5W Solar Panel.
It may be necessary to recharge the battery during the season!

146140



P 100

Greatest value for money amongst PATURA 12 V energisers; for short fences for cattle, horses and domestic animals; deep discharge protection for longest possible operating life of the battery; incl. fence/earth lead set and battery connecting cable
Stored energy 0.6 joules

P 100

146100

P 100 with accessible carry box

146110

P 100 with carry box Compact (max. 84 Ah battery)

146130



P 200

The 12 V energiser for short fences with light vegetation for cattle and horses; deep discharge protection for longest possible operating life of the battery; incl. fence/earth lead set and battery connecting cable
Stored energy 1.5 joules

P 200

146200

P 200 with accessible carry box

146210

P 200 with carry box Compact (max. 84 Ah battery)

146230



Energiser
monitoring indicator

Earth terminal

Fence output terminal

Boxes
see pages
A30-A33

**3 year
WARRANTY**



P 300

The 12 V energiser for electric fences of medium length with vegetation for cattle and horses; deep discharge protection for longest possible operating life of the battery; incl. fence/earth lead set and battery connecting cable. Stored energy 2.4 joules

P 300

146300

P 300 with accessible carry box

146310

P 300 with carry box Compact

(max. 84 Ah battery)

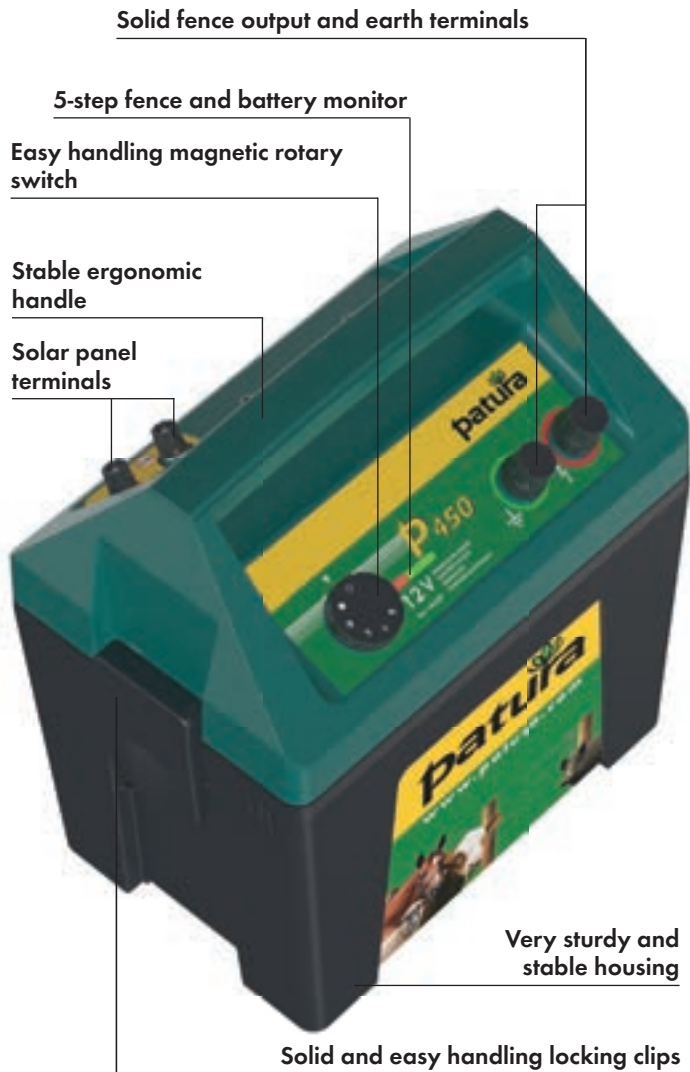
146330

12 V Battery Energisers		Max. fence length in km (multiple wires)															No. of 1 m earth stakes (min)														
Ref.	Stored energy (joules)	Max. output energy (joules)		Voltage at 500 ohms (volts)		Voltage at 100 ohms (volts)		Max. power consumption at 12 V (mA)		Supply voltage (volts)		No vegetation		Normal vegetation		Heavy vegetation		Herd protection (heavy vegetation)		Max. no. nettings (<0.5 Ohms)		Energiser monitoring indicator		Deep discharge protection		2 power levels		Recommended solar panel power output		Recommended battery (min Ah)	
P 100	146100	0.60	0.45	7900	4300	1500	50-70	12	5	2	-	2.5	1	-	-	-	-	-	-	-	-	•	-	15	45	1	Only perfect earthing allows maximum power at the fence				
P 200	146200	1.5	1.1	9600	5400	1900	110-155	12	10	3	1	5	1.5	0.5	-	4	-	-	-	-	•	-	15	50	1						
P 300	146300	2.4	1.7	9900	5700	2100	170-260	12	15	5	1.5	7.5	2.5	0.75	-	6	-	-	-	-	•	-	25	50	2						

Further information can be found in section "Energiser Selection" (pages A4/A5)

The MaxiBox – powerful and easy to handle

High flexibility and more portability in the handling of powerful battery energisers were the basis for the development of the MaxiBox. The 12 volt battery is incorporated in the housing and protected from the weather. The transportation of the energiser and the battery is simplified. The person who is transporting the energiser is protected from contact with the battery. The solar module can be fold down or detach for transport. The MaxiBox: As portable as a 9 volt battery energiser + as powerful as a 12 volt car battery energiser.

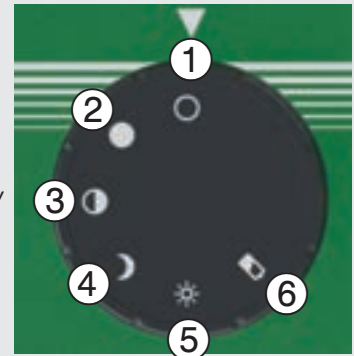


Switch setting

Absolutely waterproof magnetic rotary switch

6 setting options

- ① Off
- ② Full power
- ③ Half power
- ④ Fast full power at night, off during the day
- ⑤ Slow at night with half power, fast during the day with full power
- ⑥ Battery test



Fence and battery indicator lights

Lights up in the rhythm of the fence impulses



Switch positions ① to ⑤ displays the fence voltage in steps of 1000 V.
Switch position ⑥ displays the battery condition in steps of 20%.

All MaxiBoxes have deep discharge protection and day/night switching



Battery box with 12 V battery; maximum size: 290 x 200 x 235 mm

12 V Battery Energisers		Max. fence length in km (multiple wires)										No. of 1 m earth stakes (min)											
Ref.	Stored energy (joules)	Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)	Voltage at 100 ohms (volts)	Max. power consumption at 12 V (mA)	Supply voltage (volts)	No vegetation	Normal vegetation	Heavy vegetation	No vegetation	Normal vegetation	Heavy vegetation	Herd protection (heavy vegetation)	Max. no. nettings (<0.5 Ohms)	Fence indicator lights + Battery indicator lights	Day/night switch	Deep discharge protection	2 power levels	Recommended solar panel power output	Recommended battery (min Ah)	No. of 1 m earth stakes (min)	
P 250	144200	2.6	2.0	10500	6300	2500	90-170	12	15	5	1.5	7.5	2.5	0.75	-	6	•	•	•	•	40	50	1
P 350	144300	4.6	3.5	10100	6800	2900	150-290	12	24	8	3	12	4	1.5	0.5	12	•	•	•	•	40	50	2
P 450	144400	6.5	4.8	10500	7000	3000	200-390	12	28	9	4.5	14	4.5	2.0	0.75	16	•	•	•	•	65	50	3

Further information can be found in section "Energiser Selection" (pages A4/A5)



**3 year
WARRANTY**



MaxiBox P 250

A powerful energiser in a compact housing for taking a 12 volt battery; the 12 volt energiser for all applications, including those with vegetation at the fence; incl. fence and earth cable
Stored energy: 2.6 joules

144200

MaxiBox P 350

A powerful energiser in a compact housing for taking a 12 V battery; the energiser for all applications, including those with strong vegetation at the fence and animals that are difficult to contain, incl. fence and earth cable
Stored energy: 4.6 joules

144300



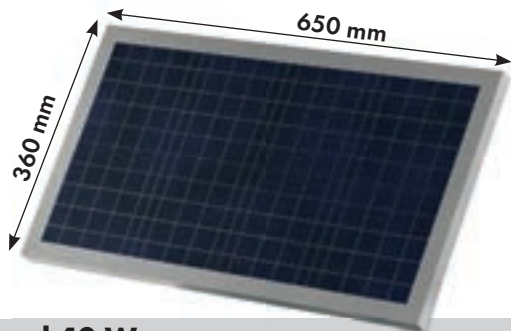
MaxiBox P 450

A powerful energiser in a compact housing for taking a 12 V battery; the energiser for all applications, including those with heavy vegetation at the fence and animals that are difficult to contain (including wild animals), incl. fence and earth cable
Stored energy: 6.5 joules

144400



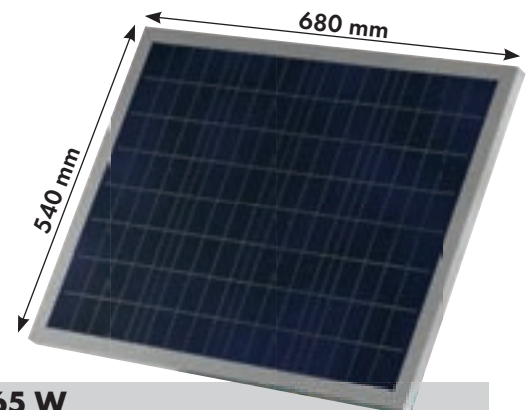
All MaxiBoxes are ready for operation with solar panels



Solar Panel 40 W

With holder for MaxiBox, including connecting cable for MaxiBox, rigid aluminum frame, recommended for P 250 and P 350

144250



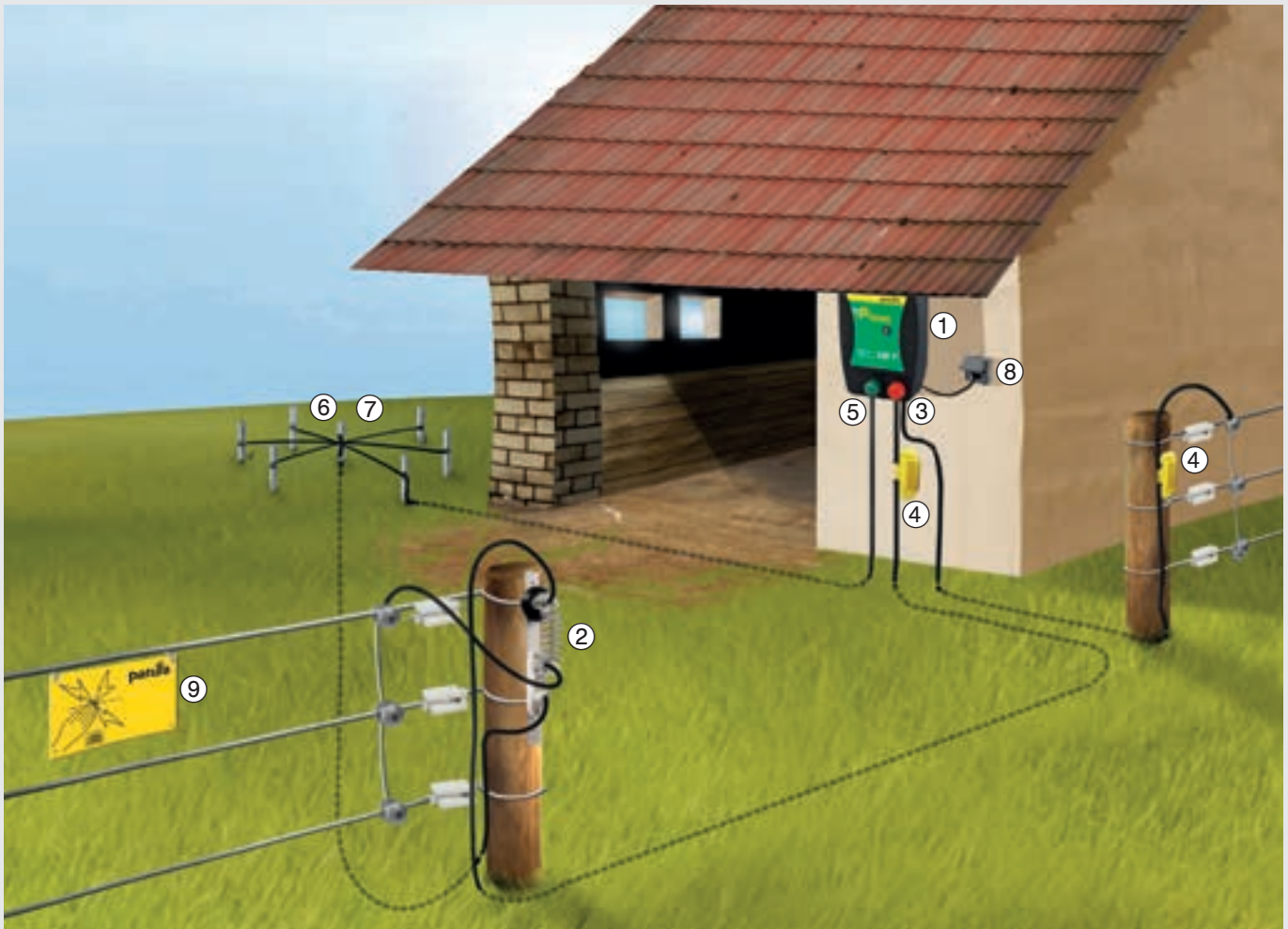
Solar Panel 65 W

With holder for MaxiBox, including connecting cable for MaxiBox, rigid aluminum frame, recommended for P 450

144450

The perfect installation of your PATURA mains energiser

Mains energisers should be used when there is a 230 V power outlet close to the pastures. Lead outs to the fence up to 200 meters can be easily made. A mains energiser is usually installed after the purchase and inconspicuously does its job for decades. Therefore it is particularly important that the unit is installed very carefully to guarantee a long-term and reliable operation of the energiser and the fence.



If you consider the following points you will have a long-term and reliable performance of your fences:

- ① A suitable location to install your mains energiser is on the outside of the wall of a building close to a power outlet and under a projecting roof, large enough.
- ② If you want to install your energiser inside a building this is only permitted in buildings with no fire hazard. Furthermore you have to install a lightning diverter before you insert a lead out cable into the building.
- ③ From the fence terminal of the energiser you run a special high voltage cable to your fence.
- ④ If you wish you can install a cut-out switch in order to switch ON or OFF the power to different pastures.
- ⑤ From the earth terminal of the energiser you run the same high voltage cable to your earth system.
- ⑥ Install your earth system quite away from the building at a location where the ground stays wet throughout the year.
- ⑦ Check your earth system at the time of installation and later on at least once a year preferably during a dry period.
- ⑧ Protect your energiser against a damage from a surge through the mains by installing a surge protector plug.
- ⑨ Mark your fence by placing suitable warning signs.



Detailed information on the different subjects you will find in the following chapter "Accessories".

How much energy does my energiser consume?

- Note the power consumption of the energiser (in Watt) from the table below, or from the identification label of the energiser e.g. P4000: 7.0 Watts
- Calculate the power consumption in kWh per year:
 $\text{Power consumption} \times 24 \times 365 / 1000$; e.g. For the P4000: $7.0 \times 24 \times 365 / 1000 = 61 \text{ kWh}$.
 Therefore, the energiser is consuming for year round operation 61 kWh, this converts into 5.1 kWh per month or 0.17 kWh per day.



3 year Warranty



P 1000

Greatest value for money amongst PATURA 230 V energisers; for short fences for cattle, horses and domestic animals; energiser monitoring indicator; power supply cable incl. Stored energy 0.75 joules

141000

P 2000

The 230 V energiser for short fences with light vegetation for cattle and horses; energiser monitoring indicator; power supply cable incl. Stored energy 1.5 joules

142000



Energiser monitoring indicator



Earth terminal

Fence output terminal

P 3000

The 230 V energiser for electric fences with vegetation for cattle and horses; energiser monitoring indicator; power supply cable incl. Stored energy 2.7 joules

143000

P 4000

The 230 V energiser for electric fences for cattle, horses and sheep, also for longer fences with heavier vegetation; energiser monitoring indicator; power supply cable incl. Stored energy 5.8 joules

144040

230 V Mains Energisers

Ref.	Stored energy (joules)	Max. output energy (joules)	Voltage at 500 ohms (volts)		Voltage at 100 ohms (volts)		Power consumption (watts)	Supply voltage (volts)	Vegetation						Max. fence length in km (multiple wires)	Energiser monitoring indicator	Multiple fence indicators	Reduced voltage terminal	Remote control option	No. of 1 m earth strokes (min)
			No load	at 500 ohms	No vegetation	Normal vegetation			Heavy vegetation	No vegetation	Normal vegetation	Heavy vegetation	Herd protection (heavy vegetation)	Max. no. nettings (≥0.5 Ohms)						
P 1000	141000	0.75	0.45	9700	4700	1400	2.0	230	5	2	-	2.5	1	0	-	-	-	-	-	1
P 2000	142000	1.5	1.1	9900	5400	2000	2.5	230	10	3	1	5	1.5	0.5	-	4	-	-	-	1
P 3000	143000	2.7	1.8	9200	5600	2100	4.0	230	15	5	1.5	7.5	2.5	0.75	-	6	-	-	-	2
P 4000	144040	5.8	3.2	9900	6100	2200	7.0	230	23	8	3	12	4	1.5	0.4	10	-	-	-	2

Only perfect earthing allows maximum power at the fence

Further information can be found in section "Energiser Selection" (pages A4/A5)

PATURA Multi-Voltage Energisers 12 V + 230 V = 1 Energiser

With only one energiser you can cover almost all conceivable application areas. The electronic of the energiser works with 12 V supply voltage. With the provided 12 V battery lead set it can be connected directly to a 12 V battery. The energiser is either mounted directly on the fence wire, on the fence post or in a carry box. If used as a mains energiser it will operate with an external mains adaptor connected to the 230 V mains supply. When used like this, the energiser including the mains adaptor need to be installed in a dry location, non firehazard buildings or below insufficient cover.

! Do not use a cable reel outdoors in order to connect the energiser to the mains system

Energiser monitoring indicator



Earth terminal

Fence output terminal

PATURA multi-voltage energiser - universally applicable



Mounted inside carry box: energiser and battery are sheltered inside the carry box in close proximity to the fence



230 V connection (with mains adaptor): inside a building (without fire risk) or on an outside wall below a cover



Mounting on a fence post: the energiser is directly attached to a fence post - The P 1 is the ideal energiser for short temporary fences

Ref.	Stored energy [joules]	Max. output energy [joules]	No-load voltage [volts]	Voltage at 500 ohms [volts]	Voltage at 100 ohms [volts]	Power input at 230 V [W]	Max. power consumption at 12 V [mA]	No vegetation		Normal vegetation		Heavy vegetation		Herd protection (heavy vegetation)		Energiser monitoring indicator	Battery deep discharge protection	Recommended solar panel power output [W]	Recommended battery [min Ah]	No. of 1 m earth stakes (min)
								Max. fence length in km (multiple wires)	Max. no. nettings (40.5 Ohms)	Max. fence length in km (multiple wires)	Max. no. nettings (40.5 Ohms)	Max. fence length in km (multiple wires)	Max. no. nettings (40.5 Ohms)	Max. fence length in km (multiple wires)	Max. no. nettings (40.5 Ohms)					
P 1	147110	0.7	0.5	8300	4400	1600	1.0	60	5	2	-	2.5	1	-	-	•	•	15	45	1
P 2	147210	1.4	1.0	9800	5300	1800	1.8	100	10	3	1	5	1.5	0.5	-	•	•	15	50	1
P 3	147310	2.7	2.0	11000	5900	2100	3.0	195	15	5	1.5	7.5	2.5	0.75	-	•	•	25	50	2
P 4	147410	4.5	3.0	11400	6200	2400	4.6	320	20	7.5	2.5	10	3	1.2	0.4	•	•	40	88	2
P 5	147500	6.3	3.8	11000	6300	2600	6.3	450	25	8.5	3	12	3.5	1.5	0.5	•	•	40	100	3

Further information can be found in section "Energiser Selection" (pages A4/A5)



P 1

The PATURA multi-voltage energiser for short fences with light vegetation for cattle, horses and domestic animals; deep discharge protection; including 230 V mains adaptor and 12 V connection cable
Stored energy: 0.7 joules

P 1
147110

Accessible Carry Box
900200

Carry Box Compact, with fully removable lid
(max 84 Ah battery)
900201



P 2

The PATURA multi-voltage energiser for short fences with light vegetation for cattle and horses; deep discharge protection; including 230 V mains adaptor and 12 V connection cable

Stored energy: 1.4 joules

P 2
147210

Accessible Carry Box
900200

Carry Box Compact, with fully removable lid
(max 84 Ah battery)
900201



P 3

The PATURA multi-voltage energiser for pasture with normal vegetation for cattle and horses; deep discharge protection; including 230 V mains adaptor and 12 V connection cable
Stored energy: 2.7 joules

P 3
147310

Accessible Carry Box
900200

Carry Box Compact, with fully removable lid
(max 84 Ah battery)
900201



P 4

The PATURA multi-voltage energiser for electric fences for cattle and horses, also for longer fences with normal vegetation; deep discharge protection; including 230 V mains adaptor and 12 V connection cable
Stored energy: 4.5 joules

P 4
147410

Accessible Carry Box
900200

Carry Box Compact, with fully removable lid
(max 84 Ah battery)
900201

Boxes
see pages
A30-A33



P 5

The PATURA multi-voltage energiser for electric fences for cattle, sheep and horses, also for longer fences with heavier vegetation; deep discharge protection; including 230 V mains adaptor and 12 V connection cable

Stored energy 6.3 joules

P 5
147500

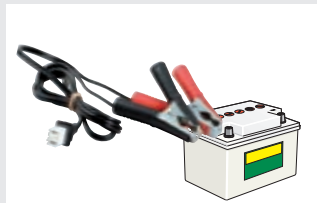
Accessible Carry Box
900200

**3 year
WARRANTY**

Included



230 V mains adaptor

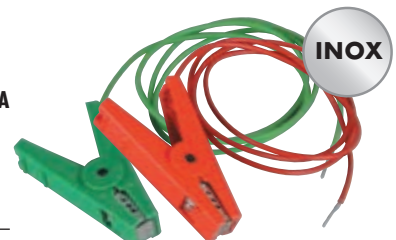


12 V battery lead set

Fence and Earth Lead Set with Probes

Insulated spring clips (red = fence / green = earth) with stainless steel contacts and 3.0 mm probes;
please order separately for PATURA energisers P1 - P5

2 Lead Connectors, red and green
101001



INOX



3 year
WARRANTY



P 1500

The PATURA multi-function energiser with the newest, efficient energiser technology for short fences with little vegetation for cattle and horses; 5-step fence and battery monitor, 6-step switch, deep discharge protection; including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set

Stored energy: 1.4 joules

P 1500

142100

P 1500 with accessible carry box

142110

P 1500 with carry box Compact (max. 84 Ah battery)

142130

P 1500 with anti-theft-box and earth stake*

142120

P 2500

The PATURA multi-function energiser with the newest, efficient energiser technology for fences with normal vegetation; 5-step fence and battery monitor, 6-step switch, deep discharge protection; including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set

Stored energy: 2.7 joules

P 2500

142200

P 2500 with accessible carry box

142210

P 2500 with carry box Compact (max. 84 Ah battery)

142230

P 2500 with anti-theft-box and earth stake*

142220



Boxes
see pages
A30-A33



P 3500

The PATURA multi-function energiser with the newest, efficient energiser technology even for longer fences with normal vegetation; 5-step fence and battery monitor, 6-step switch, deep discharge protection; including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set

Stored energy: 4.5 joules

P 3500

142300

P 3500 with accessible carry box

142310

P 3500 with carry box Compact (max. 84 Ah battery)

142330

P 3500 with anti-theft-box and earth stake*

142320

P 3800

The PATURA multi-function energiser with the newest, efficient energiser technology even for longer fences with heavier vegetation; 5-step fence and battery monitor, 6-step switch, deep discharge protection, including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set

Stored energy: 6.3 joules

P 3800

142400

P3800 with accessible carry box

142410

P 3800 with anti-theft-box and earth stake*

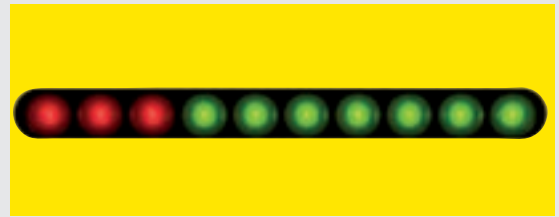
142420

* Day and night safe operation not possible

Highest power +
easy operation +
optimal control

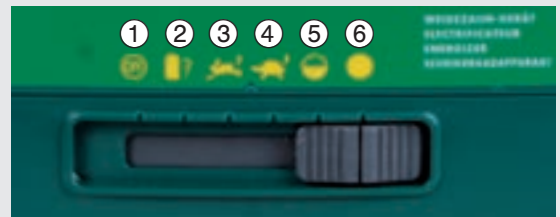


① 10-step indicator lights



Switch position 3 to 6 displays the fence voltage in steps of 1000 V
Switch position 2 displays the battery condition in steps of 10 %

② 6-step switch



- ① OFF
- ② Battery test
- ③ Fast at night, slow during the day
- ④ Slow at night, fast during the day
- ⑤ Half power
- ⑥ Full power

③ Digital display (P 4600)



Switch setting 3 to 6:
Top: Earth voltage display in kV (connected reference earth)
0.3 kV = 300 volts
Bottom: Fence voltage display in kV:
9,5 kV = 9500 V



Switch setting 2 (Battery test)
Top:
Battery voltage display in volts, e.g. 12.6 V = full battery;
11.7 V = discharged battery
Bottom:
Fence voltage display in kV,
9,5 kV = 9500 V

Multi-Function Energisers		Max. fence length in km (multiple wires)										Max. no. nettings (40.5 Ohms)		Two power levels / day / night switch		10-step fence and battery monitor		Digital display		Remote control option		Recommended solar panel power output (W)		Recommended battery (min Ah)		No. of 1 m earth stakes (min)	
	Ref.	Stored energy (joules)	Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)	Voltage at 100 ohms (volts)	Power consumption (watts)	Max. power consumption at 12 V (mA)	No vegetation	Normal vegetation	Heavy vegetation	No vegetation	Normal vegetation	Heavy vegetation	Herd protection (heavy vegetation)	•	•	•	•	100	100	3	3	Only perfect earthing allows maximum power at the fence			
P 4500	145410	9.0	6.0	9500	6800	3600	10	330-650	30	10	5	15	5	2.5	1	22	•	•	•	•	100	100	3	3	Only perfect earthing allows maximum power at the fence		
P 4600	145450	9.0	6.0	9500	6800	3600	10	330-650	30	10	5	15	5	2.5	1	22	•	•	•	•	100	100	3	3	Only perfect earthing allows maximum power at the fence		

Further information can be found in section "Energiser Selection" (pages A4/A5)



Energisers with time-delayed adaptive control and load alternation alarm



P 4500 MaxiPuls

The PATURA multi-function energiser with MaxiPuls technology for long fences with heavy vegetation for cattle, sheep, horses and to deter wild animals; 10-step fence and battery control, 6-step switch, deep discharge protection, including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set.

Stored energy: 9.0 joules

P 4500
145410

P 4500 with accessible carry box
145420

P 4500 with anti-theft-box*
145430



3 year
WARRANTY

Boxes
see pages
A30-A33



P 4600 MaxiPuls

The PATURA multi-function energiser with MaxiPuls technology for long fences with heavy vegetation for cattle, sheep, horses and to deter wild animals; 10-step fence and battery control, 6-step switch, deep discharge protection, digital display to monitor the fence, the earthing and the battery; earth monitoring via reference earth; including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set.

Stored energy: 9.0 joules

P 4600
145450

P 4600 with accessible carry box
145460

P 4600 with anti-theft-box and earth stake*
145470



Remote Control

Remote control as an upgrade to P 4600, P 6000 and P 8000; includes fence compass, i.e., with digital voltmeter and ammeter for an easy fault finding at the fence; ideal for use on wires; limited use on polywire, not suitable for polyrope or polytape

151001



Included



230 V mains adaptor



12 V battery lead set



fence/earth lead set

* Day and night safe operation not possible

P 5000: The economical and powerful 230 V energiser



3 year WARRANTY

Earth terminal

Fence output terminal

10-step indicator lights



Easy to read indicator lights displays the fence voltage in steps of 1000 V

Control monitor

- ① Red
- ② Red
- ③ Red
- ④ Green
- ⑤ Green
- ⑥ Green
- ⑦ Green
- ⑧ Green
- ⑨ Green
- ⑩ Green

Fence voltage

- over 1000 volts
- over 2000 volts
- over 3000 volts
- over 4000 volts
- over 5000 volts
- over 6000 volts
- over 7000 volts
- over 8000 volts
- over 9000 volts
- over 10000 volts



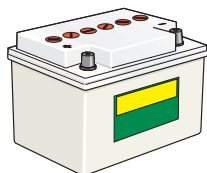
P 5000 MaxiPuls

The PATURA 230 V energiser (12 V operation requires the battery connection cable Ref. 9187225) with MaxiPuls technology for long fences with heavy vegetation for cattle, sheep, horses and to deter wild animals; 10-step fence and battery control, deep discharge protection, including 230 V mains adapter

Stored energy: 14.0 joule

145520

This energiser works with 230 V mains supply. If desired, it can be operated with a separately available battery connection cable (Ref. 9187225) with 12 V supply voltage.



Multi-Function Energisers		Max. fence length in km (multiple wires)										Two power levels / Day / night switch		10step fence and battery monitor		Digital display		Remote control option		Recommended solar panel power output (W)		Recommended battery (min Ah)		No. of 2 m earth stakes (min)	
Ref.	Stored energy (joules)	Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)	Voltage at 100 ohms (volts)	Power consumption (watts)	Max. power consumption at 12 V (mA)	No vegetation	Normal vegetation	Heavy vegetation	No vegetation	Normal vegetation	Heavy vegetation	Herd protection (heavy vegetation)	Max. no. netings (0.5 Ohms)	200	200	200	200	2	3	2	3		
P 5000	145520	14	10,7	9600	7300	4900	13,7	950	40	15	6	20	7,5	3	1,5	35	-	-	-	200	200	2	3		
P 6000	145602	20	15	9800	7500	4900	18	630-1250	48	18	8	24	9	4	2	40	-	-	-	200	200	2	3		

Further information can be found in section "Energiser Selection" (pages A4/A5)

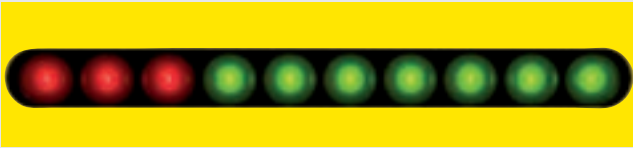


Energisers with time-delayed adaptive control and load alternation alarm

P 6000: The most powerful multi-function energiser with comfort to the fullest

3 year
WARRANTY

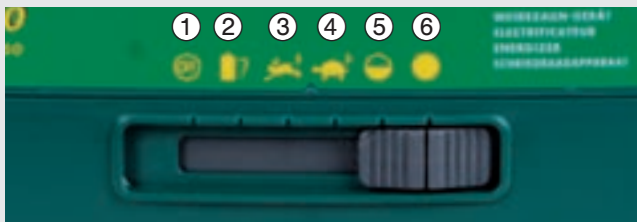
① 10-step indicator lights



Switch position 3 to 6 displays the fence voltage
Switch position 2 displays the battery condition

Control monitor	Fence voltage	Battery condition
① Red	over 1000 volts	0 - 10 % full
② Red	over 2000 volts	10 - 20 % full
③ Red	over 3000 volts	20 - 30 % full
④ Green	over 4000 volts	30 - 40 % full
⑤ Green	over 5000 volts	40 - 50 % full
⑥ Green	over 6000 volts	50 - 60 % full
⑦ Green	over 7000 volts	60 - 70 % full
⑧ Green	over 8000 volts	70 - 80 % full
⑨ Green	over 9000 volts	80 - 90 % full
⑩ Green	over 10000 volts	90 - 100 % full

② 6-step switch

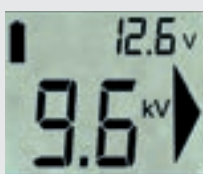


- | | | |
|----------------|--------------------------------------|-----------------------------|
| ① OFF | ③ Fast at night, slow during the day | ⑤ Half power during the day |
| ② Battery test | ④ Slow at night, fast during the day | ⑥ Full power |

③ Digital display



Switch setting 3 to 6:
Top: Earth voltage display in kV (connected reference earth)
0.3 kV = 300 volts
Bottom: Fence voltage display in kV
9,6 kV = 9600 V



Switch setting 2 (Battery test)
Top: Battery voltage display in volts, e.g. 12.6 V = full battery;
11.7 V = discharged battery
Bottom: Fence voltage display in kV, 9,6 kV = 9600 V



Earth terminal

Reference earth terminal

Fence half-voltage terminal

Fence output terminal

P 6000 MaxiPuls

The PATURA Multi-function energiser with MaxiPuls technology for long fences with heavier vegetation for cattle, sheep, horses and to deter wild animals; 10-step fence and battery monitor, 6-step switch, deep discharge protection, digital display to monitor the fence, earthing and battery; earth monitoring via reference earth; including 230 V mains adaptor, stainless steel 12 V battery lead set and fence/earth lead set
Stored energy: 20.0 joules

145602

Remote Control

Remote control as an upgrade to P 4600, P 6000 and P 8000; includes fence compass, i.e., with digital voltmeter and ammeter for an easy fault finding at the fence; ideal for use on wires; limited use on polywire, not suitable for polyrope or polytape

151001



Included



230 V mains adaptor



12 V battery lead set



fence/earth lead set

PATURA P8000 Tornado Power Technological leap in energisers

Since 2010, only energisers with a maximum of 15 Joules output energy can be sold in Europe. Based upon intensive research and long-time field tests, PATURA has implemented a completely new technology in energisers. With 15 Joules output energy, the new PATURA P8000 Tornado Power achieves the same or even higher fence voltages compared to the previous model P8000 with 37 Joules, even under high load conditions at the fence. This extreme efficiency improvement was achieved through the help of an isolated power supply (IPC) using a processed transformer design. With the P8000 Energiser the IPC power supply is used for the first time at all in energisers.

Innovative power supply in energisers

The legally required insulation between fence and power supply has been transferred from the transformer to the power supply. The energy is transmitted according to the principle of inductive, electromagnetic coupling. This new innovative power supply (IPC: Isolated Power Coupling) is the prerequisite for a considerable increase in efficiency in device electronics. Especially through lower resistances in the transformer and in the output circuits, it was achieved that the fence voltage remains high even under an extreme load. This technology is protected by patent law.



The power supply with inductive coupling is simply plugged into the back of the energiser. There is no direct connection from the power supply to the energiser itself



**3 year
WARRANTY**

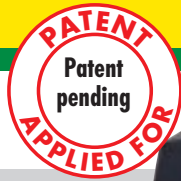
12-step fence voltage display with LED-technology



P 8000 Tornado Power																							
Ref.	145910	21	15	8200	7200	7800	5800	25	100	30	15	50	15	8	4	60	•	•	•	•	•	•	6
Stored energy (joules)																							
Max. output energy (joules)																							
No-load voltage (volts)																							
Voltage at 500 ohms (volts)																							
Voltage at 100 ohms (volts)																							
Voltage at 50 ohms (volts)																							
Power consumption (watts)																							
No vegetation																							
Normal vegetation																							
Heavy vegetation																							
No vegetation																							
Normal vegetation																							
Heavy vegetation																							
Herd protection (heavy vegetation)																							
Max. no. nettings (40.5 Ohms)																							
12-step fence control																							
Earth monitoring																							
Workload display																							
Tornado Power Technology																							
Remote control option																							
No. of 2 m earth stakes (min)																							

Only perfect earthing allows maximum power at the fence





P 8000 Tornado Power

The most powerful PATURA energiser for extreme fence conditions and fence lengths; with Tornado Power Technology and active power adjustment; separate remote control available
 Stored energy: 21 Joules

145910



Remote Control

Remote control as an upgrade to P 4600, P 6000 and P 8000; includes fence compass, i.e., with digital voltmeter and ammeter for an easy fault finding at the fence; ideal for use on wires; limited use on polywire, not suitable for polyrope or polytape

151001

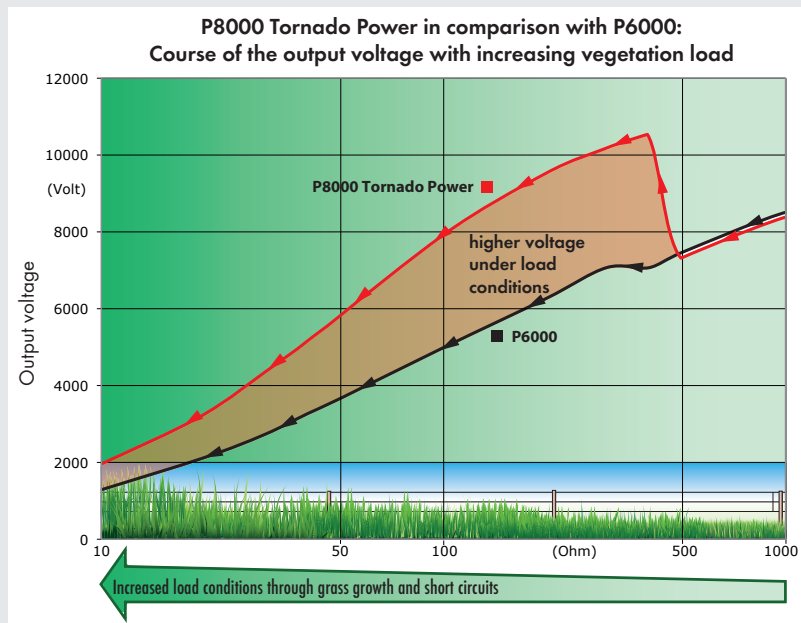


! For the P8000 Tornado Power, generally we recommend the use of PATURA high voltage cable aluminium 2.7 mm (Ref. 161160)

Energisers, Accessories

The decisive advantages for the livestock owner

- The ultra-low-impedance design with Tornado Power Technology allows highest voltages at the fence, even with heaviest vegetation.
- Even though limited to 15 Joules, the P8000 Tornado Power achieves at least the same or often even higher fence voltages compared to the clearly stronger previous model P8000 with 37 Joules output energy.
- Provides significantly higher fence voltages compared to equivalent conventional devices, when there is vegetation.
- 50% less power consumption with the same degree of safety in comparison to the previous model.
- The power supply via the isolated power transmission (IPC) offers at least a 10 times higher protection against lightning strikes and overvoltage.



In the main working range under 500 Ohms, the output voltage of the new P8000 Tornado Power is significantly higher than that of the equally strong P6000. Both devices have a max. output energy = impulse energy of 15 joules.

Even when there is heavy vegetation at the fence, the P8000 achieves fence voltages of 5000 Volts.

Easy transportation - the PATURA Carry Boxes

The PATURA Carry Box provides two functions: protection against weather and transport aid. A handle on everything: energiser, battery and solar panel. Most convincing arguments are the robust and large construction of the box, that make it easy to change the energiser. For the smaller energisers (up to P 3500), the easy-to-handle Carry Box Compact is recommendable. For the larger 12V energisers, the Accessible Carry Box offers a maximum of space, enough for larger batteries and solar panels.



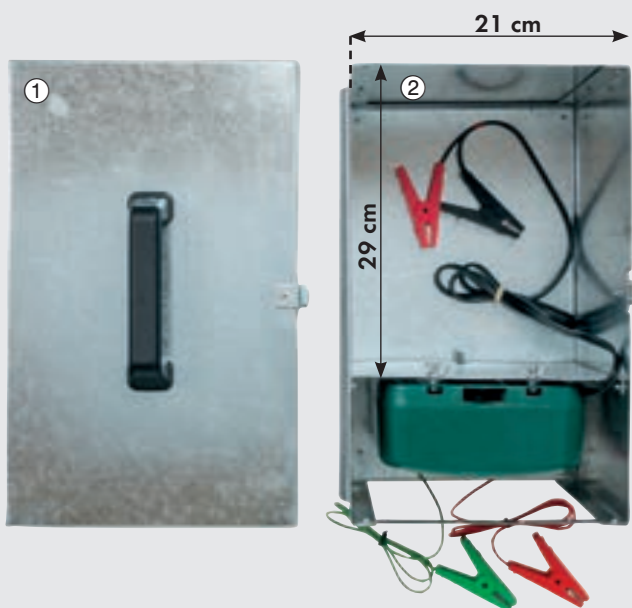
Ergonomic plastic handle

Optimal visibility of the device display

Ideally suited for installing solar panels

Matches all PATURA 12V and Multi-Voltage Energisers up to P 4600

Carry Box Compact, with fully removable lid



① A fully removable lid, fixed with a quick-lock, allows for excellent access to the battery and energiser.

② 12 V batteries, up to 28 cm length, can be carried in this box.

Accessible Carry Box



① The accessible carry box is ideal to get a durable and stable system for an energiser with solar panel.

② Enough space in order to use even bigger sized batteries (up to 36 cm length)

All PATURA 12 V- and Multi-Voltage Energisers (up to P 4600) can be easily installed in the box.



Carry Box Compact, with fully removable lid

Carry box with fully removable lid.
Due to its smaller size and well protection, it is particularly appropriate for long and frequent transportations.
Suitable for use with the following energisers: P 1500 - P 3500; P 1 - P 4; P 100 - P 300

- 900201 for energiser P 1500 - P 3500 / P 1 - P 4
- 900202 for P100 - P300



Accessible Carry Box

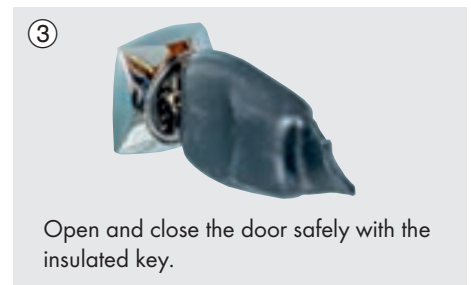
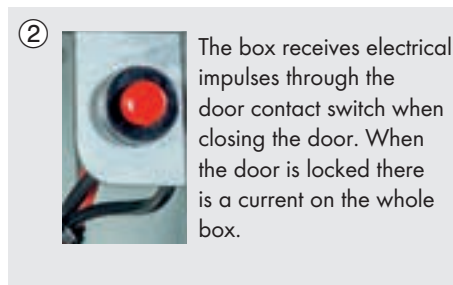
Large galvanised metal box
Suitable for use with the following energisers:
P 1500 - P 4600; P 1 - P 5; P 100 - P 300
Note: Mounting kit (Ref. 90020001) for energisers P100 - P300 needed!

- 900200 Accessible Carry Box

Anti-theft protection by electroshock – the PATURA safety boxes

Safety Box

The box gets electrical impulses from the inside placed energiser. It is also mechanical protected through a 80 cm long anchoring in the ground on a mechanical lock. When opening the door with the insulated key, the door contact switch interrupts the current flow. There is enough space in the box for energiser and battery. The PATURA safety box is optional available with different solar panels. Use the earth stake as stand.



Safety Box

with 2 insulated keys and earth stake

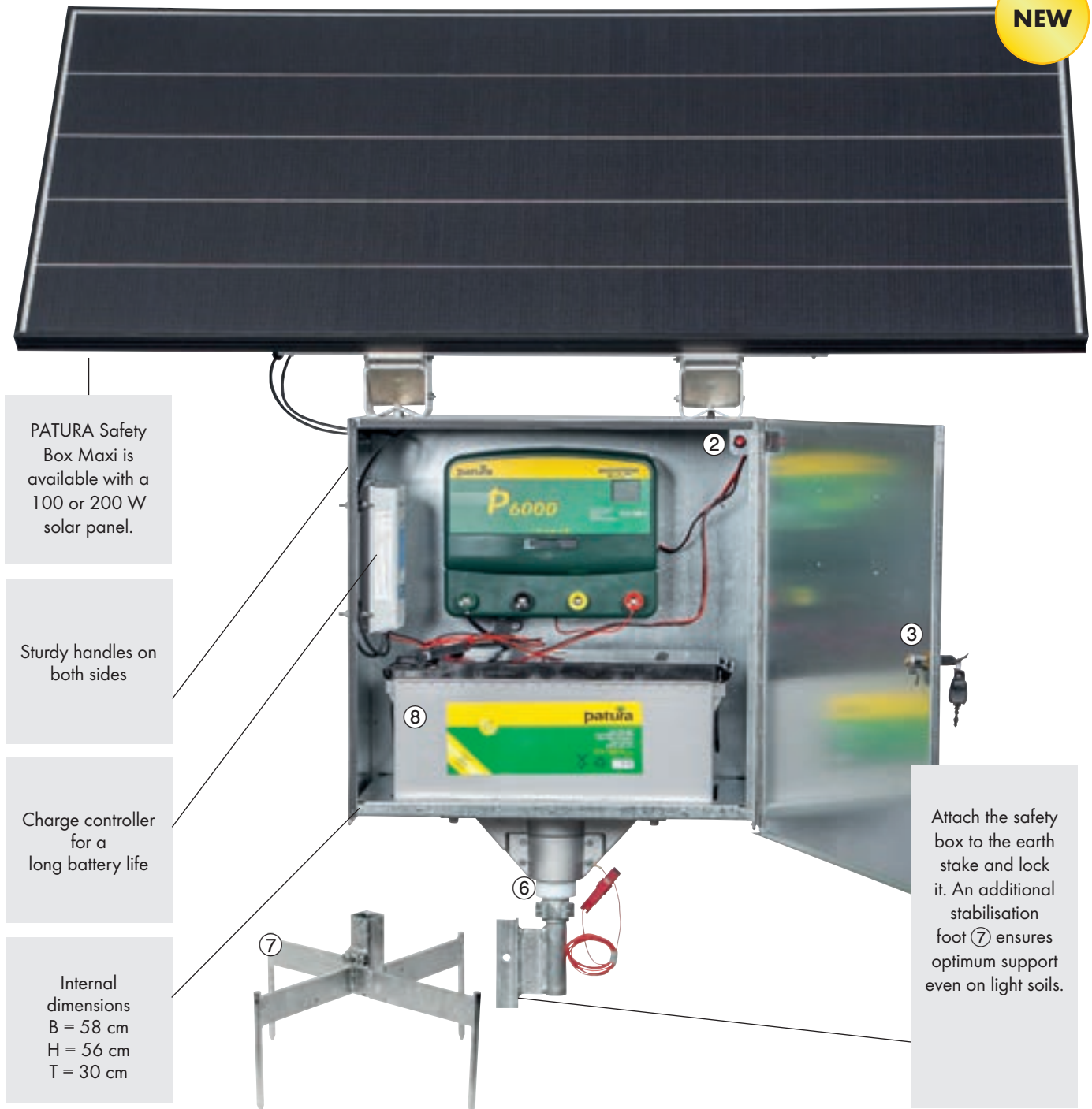
900301 Safety Box

161903 Spare Earth Stake



Safety Box Maxi

Energisers with output energies of up to 15 J (P 6000) can fit into the Safety Box Maxi. This makes it particularly suitable for long fences exposed to heavy vegetation. Maintenance-free operation from April to October possible with extra-large solar panels and a 200 Ah battery.


NEW


PATURA Safety Box Maxi is available with a 100 or 200 W solar panel.

Sturdy handles on both sides

Charge controller for a long battery life

Internal dimensions
B = 58 cm
H = 56 cm
T = 30 cm

Attach the safety box to the earth stake and lock it. An additional stabilisation foot ⑦ ensures optimum support even on light soils.

Super Glass Mat Battery 200 Ah

maintenance-free 12 V battery for the Safety Box Maxi
12 month guarantee

⑧ 133630 12 V/200 Ah

Safety Box Maxi

with 2 insulated keys, earth stake and an additional stabilisation foot

900340 P 4500 + 100 W Solar Panel

900350 P 4600 + 100 W Solar Panel

900360 P 6000 + 200 W Solar Panel

⑦ 161905 Stabilisation foot for the Safety Box Maxi

161903 Spare Earth Stake



Solar power, the environmentally friendly energy

By means of the progressing and proven technology in the area of solar panels, the sun is rapidly becoming a source of cheap energy for electric fences, too. The costs are restricted to a one-time acquisition of a solar panel. There are no further maintenance or follow-up costs. Given correct dimensioning, PATURA solar installations are designed to run an electric fence installation, maintenance free, from spring through autumn. If the energisers are switched down to a lower power level, this maintenance-free operation can be continued well into the winter.



- Polycrystalline cells for highest energy efficiency
- 5 year efficiency warranty for all solar panels
- All solar panels with integrated charge regulator
- Universal bracket allows mounting on all energisers, onto posts and on walls

Universal bracket made from aluminium

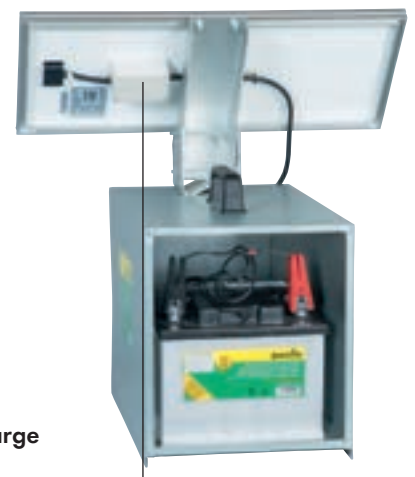
PATURA solar installations with integrated charge regulator

PATURA solar panels with integrated charge regulator are supplied with plug-in connector cables for all PATURA energisers. In order to select the solar panel that suits your energiser the following requirements need to be met to ensure a trouble-free operation:

1. Use the recommended minimum size solar panel for the particular energiser
2. Note the minimum battery size required
3. When adverse conditions exist double the solar panel power output

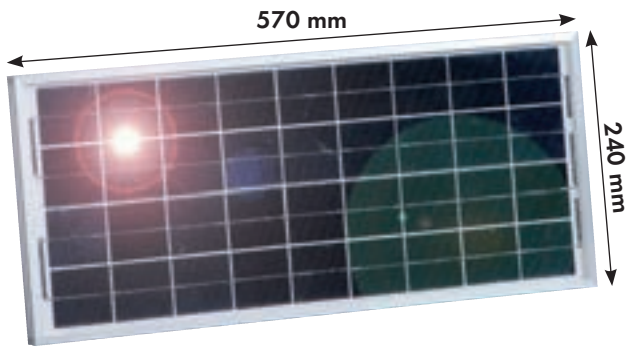


15 W solar panel with P 1500 and carry box



Integrated charge regulator

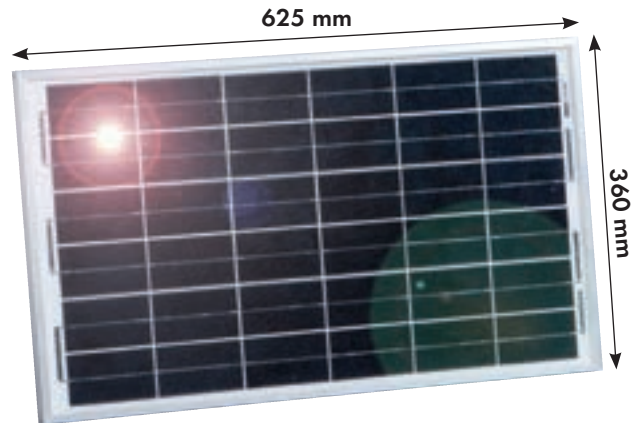
Solar panel 15 W with carry box and universal bracket



Solar Panel 15 W

Including connecting cables, integrated charge regulator; polycrystalline silicon cells; rigid aluminium frame;

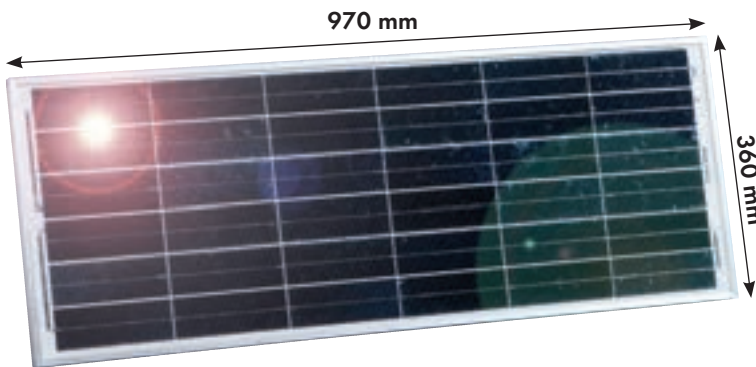
- 148420 Solar panel 15 W
- 148421 With universal mounting bracket for P 100, P 200, P 1500



Solar Panel 25 W

Including connecting cables, integrated charge regulator; polycrystalline silicon cells; rigid aluminium frame;

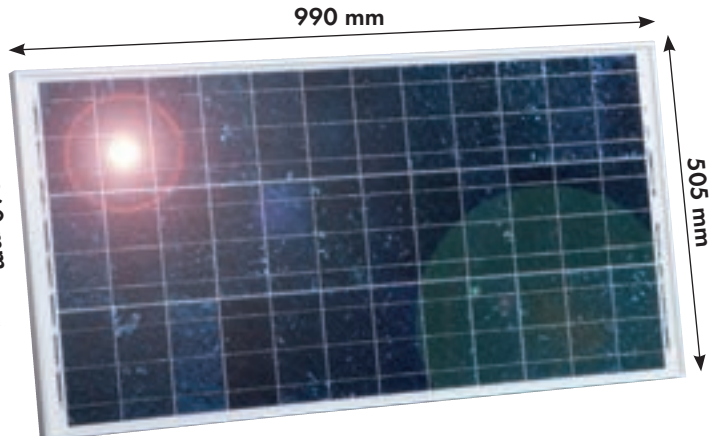
- 148520 Solar panel 25 W
- 148521 With universal mounting bracket for P 300, P 2500



Solar Panel 40 W

Including connecting cables, integrated charge regulator; polycrystalline silicon cells; rigid aluminium frame;

- 148620 Solar panel 40 W
- 148621 With double universal mounting bracket for P3500/P3800



Solar Panel 65 W

Including connecting cables and integrated charge regulator; polycrystalline silicon cells; rigid aluminium frame;

- 148720 Solar panel 65 W
- 148721 With double universal mounting bracket for P4500/P4600

Solar Panel										
	Ref.	Suitable for use with*	Length (mm)	Width (mm)	Operation with 12 V battery (min Ah)	Polycrystalline cells	Integrated charge regulator	Aluminium frame	Connection: ready wiring	Universal mounting bracket
15 Watt	148421	P 100/P 200/P 1500/P 1/P 2	568	243	80	•	•	•	•	•
25 Watt	148521	P 300/P 2500/P 3	627	360	80	•	•	•	•	•
40 Watt	148621	P 3500/P 3800/P 4/P 5	970	360	100	•	•	•	•	•
65 Watt	148721	P 4500/P 4600	986	507	130	•	•	•	•	•

For critical irradiation conditions, like partial shading, suboptimal south exposure, foggy sites, we recommend to double the solar cell power output

* Maintenance-free operation on full power level from spring to summer, given accurate south-orientation and the opportunity of receiving full daily sun (no partial shading); for winter operation set energiser to lower power levels and re-charge battery as required.



PATURA Solar Energisers

With the PATURA solar energisers, the solar module and the storage battery are integrated into the housing of the unit. All three components are precisely matched to each other for optimum operation - maintenance-free from spring to autumn. These latest generation devices are compact, powerful and equipped with intelligent electronics that ensure the best possible power supply for the fence.



**3 year
WARRANTY**



Place the unit when it is not used in the winter, in the turned off state in a sunny spot. This will ensure that the battery is charged continuously until spring. This ensures maximum battery life.

① Lightweight and compact



The low weight (approx. 2.7 kg for the P25 Solar) and the large, ergonomically shaped handle ensure easy transport, even over long distances.

② Well thought-out details



The devices have a mounting slot with which they can be plugged directly onto the earth stake. Due to the raised position the full sunlight can be used. Further details are the solid connection screws with metal insert, the quick-release fastener for tool-free opening of the housing as well as the integrated storage compartments and the holding plate for the fence and earth cable.

③ Smart controller



The device is activated by means of a magnetic rotary switch. The integrated electronics then automatically regulate the output energy to the fence depending on the state of charge of the battery. Thus a maintenance-free operation from spring to autumn is possible without any problems.



P 25 Solar

Energiser with integrated 3W solar panel and 6 V / 4 Ah gel-cell battery; smart battery management, for trouble-free operation from spring to autumn; ideal for short fences; incl. fence/earth lead set
Stored energy: 0.11 J

140310

P 35 Solar

Energiser with integrated 3W solar panel and 6 V / 4 Ah gel-cell battery; smart battery management, for trouble-free operation from spring to autumn; ideal for short fences; incl. fence/earth lead set
Stored energy: 0.21 J

140410



P 70 Solar

Energiser with integrated 9.6 W solar panel and 12 V / 7 Ah gel-cell battery; smart battery management, for trouble-free operation from spring to autumn; ideal for short fences; incl. fence/earth lead set
Stored energy: 0.65 J

140510

P 140 Solar

The most powerful PATURA energiser with integrated extra strong 9.6 W solar panel and 12 V / 7 Ah gel-cell battery; smart battery management for trouble-free operation from spring to autumn and optimum current conductance; ideal for cattle, horse and sheep pastures even with normal vegetation; incl. fence/earth lead set
Stored energy: 1.3 J

140610

Solar Energisers

	Ref.	Stored energy (joules)	Max. output energy (joules)	No-load voltage (volts)	Voltage at 500 ohms (volts)	Max. power consumption (mA)	No vegetation	Little vegetation	Normal vegetation	No vegetation	Little vegetation	Normal vegetation	Herd protection	Max. no. nettings (60.5 Ohms)	Minimum length of earth stake in metres
P 25 Solar	140310	0.11	0.08	7300	2100	16	1	0.3	-	-	-	-	-	-	1.00 m (drive-in 60 cm)
P 35 Solar	140410	0.21	0.15	9300	2600	30	1.6	0.6	-	-	-	-	-	-	1.00 m (drive-in 60 cm)
P 70 Solar	140510	0.65	0.50	9800	4800	40	5	3	2	2.5	1.5	1.0	-	-	1.00 m (drive-in 60 cm)
P 140 Solar	140610	1.3	1.0	9600	5600	80	10	5	3	5	2.5	1.5	-	4	1.50 m (drive-in 1.00 m)

Only perfect earthing allows maximum power at the fence



Place the GSM fence alarm at the end of the fence to ensure complete monitoring of your entire electric fence.



Security for your pastures

Monitoring electric fences by mobile phone

Safe, complete and convenient monitoring of outlying pastures is finally possible. The PATURA GSM Fence Alarm is a fence sensor that monitors the voltage at your fence. In the event of voltage faults, you'll instantly receive an alarm on your smartphone, to prevent animal breakouts.

- The GSM Fence Alarm sends you fence voltage numbers via our free app "My.Patura.Farm" to your smartphone. You will be informed at any time whether there is a safe voltage at the pasture fence. This makes it possible to carry out complex fence checks in fractions of a second.
- A status update every 24 hours is permanently free of charge.
- In addition, an ALARM-PLUS function is available which, for example, immediately triggers an alarm as soon as the fence voltage falls below a value you have set.
- The alarm can be transmitted to any number of alarm receivers.
- When connected via the 230 V mains adapter, the voltage is checked every minute. When operated via the internal battery, the voltage is checked every 10 minutes.
- You have access to a fence diary, in which the fence voltage is recorded chronologically.
- The ALARM-PLUS package is free for the first year (costs thereafter: 60 € per year or 10 € per month).
- The PATURA GSM Fence Alarm can be used wherever you have mobile telephone network coverage.
- The "My.Patura.Farm" app is available for Android, iOS (iPhone), Windows, and Mac.
- A mobile telephone network must be available. A SIM card is permanently installed in the GSM Fence Alarm. The strongest available mobile telephone network is automatically selected.
- The PATURA GSM Fence Alarm is delivered with all necessary accessories: 230 V charger, 12 V connection cable, fence and earth cable with clamp, earth stake.
- A solar module for a permanent, maintenance-free power supply far away from any socket is available as an accessory.
- Built-in Li-Ion battery for 2 months operation. If the battery level drops, an alarm is triggered in time.
- In combination with the additionally available GSM switch, you can switch the power supply for your electric fence ON and OFF via smartphone, wherever you are.

SUBSCRIPTION	FREE	ALARM-PLUS
Automatic alarms	-	✓
Unlimited alarm recipients	-	✓
Voltage graph (Fence-Diary)	-	For the last 60 days
Frequency of status update	Every 24 hours	At voltage change
Low battery alert	✓	✓
Price (plus tax)	0 €	60 €/year From the 2nd year on



GSM Fence Alarm

Fence monitoring 24/7 with your smartphone; connects anywhere on the fence; instantly ready to use, all necessities included: Fence sensor, Li-Ion battery, 230 volt charger, 12 V charging cable, earth stake, fence and earth connection cable, built-in SIM card

Free APP for Smartphone (Android/ iOS) and PC / Mac
12 months of free data transfer included
Alarm Plus

Mobile telephone network must be available!

① 156310

Solar Panel for GSM Fence Alarm

6 V / 3 W; ready to use with PATURA GSM Fence Alarm;
mounting bracket included

② 156312

GSM Power Socket

Simple ON or OFF switching of your energiser via APP via Smartphone (Android/ iOS) or PC / Mac.

Temperature sensor included; temperature and consumption information free of charge; built-in SIM card; alarm in case of power failure (365 days free, thereafter fee-based); IP20 (only for indoor use); can switch any electrical appliance (230 V / max 16 A).

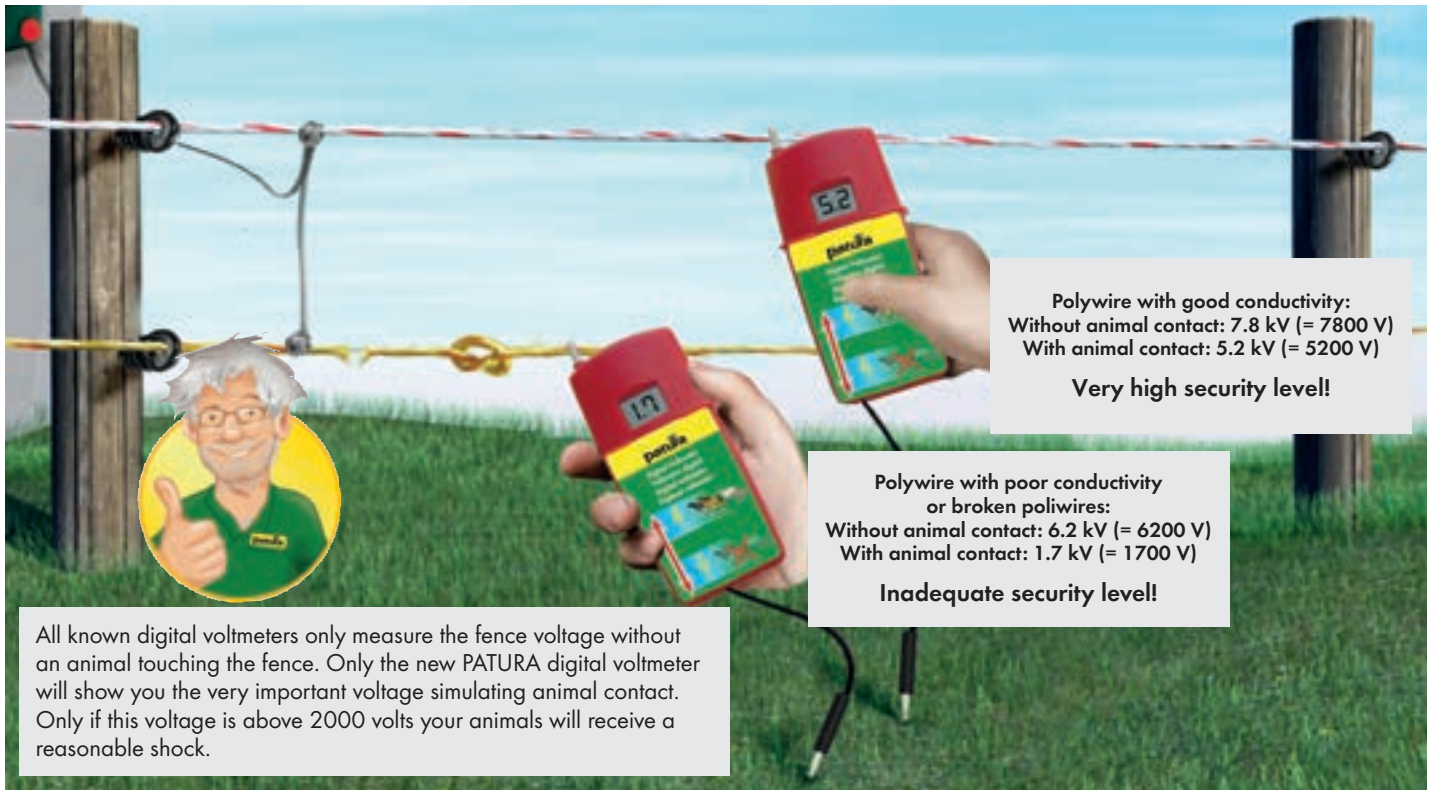
Mobile telephone network must be available!

③ 156311

Effective animal control with electric fencing

To maintain the safety of electric fences, also in the legal sense, the operator is obliged to consider the following terms:

1. The fence voltage must be at least 2000 volts at every point on the fence. PATURA recommendation: 3000 volts.
2. This is to be monitored regularly through daily measurements of the fence voltage.
3. This presupposes the presence of appropriate testing devices such as a fence tester, a digital voltmeter, a fence compass, a fence alert or a separate alarm system for an electric fence.
4. For difficult or long haired animals a fence voltage of 4000 volts is recommended.
5. Energisers with adequate power (output energy) to meet the above mentioned demands, even when there are losses due to vegetation on the fence, must be installed.
6. The fence and/or the fencing material should comply with the common level of technology.
7. Depending on the fence length, fence wiring with good conductivity should be used.
8. An appropriate fence height and/or number of wires should be allowed for, depending on risk potential and animal species.



Polywire with good conductivity:
 Without animal contact: 7.8 kV (= 7800 V)
 With animal contact: 5.2 kV (= 5200 V)
Very high security level!

Polywire with poor conductivity
 or broken polywires:
 Without animal contact: 6.2 kV (= 6200 V)
 With animal contact: 1.7 kV (= 1700 V)
Inadequate security level!

All known digital voltmeters only measure the fence voltage without an animal touching the fence. Only the new PATURA digital voltmeter will show you the very important voltage simulating animal contact. Only if this voltage is above 2000 volts your animals will receive a reasonable shock.

Do your animals respect the electric fence?

With the PATURA digital voltmeter you will know, whether the shock voltage for the animal is high enough when it touches the fence.



PATURA Digital Voltmeter with integrated load resistor to simulate animal contact

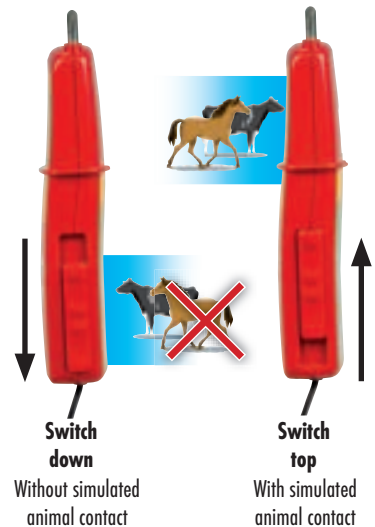
At the electric fence it is not the no-load voltage that is important, but rather the electric shock the animal actually feels when touching the fence. Animal contact is simulated via an activatable resistor. The displayed voltage with activated resistor indicates what the animal really feels. You can easily see whether there are problems along the fence which obstruct an effective current flow. Among them are especially polywire and polytape with poor conductivity, bad connections and inadequate earthing.

When the load resistor is not activated, the PATURA digital voltmeter is suitable for all measurements you usually carry out with a voltmeter, like measuring the fence voltage, measuring the output voltage and monitoring the earthing.

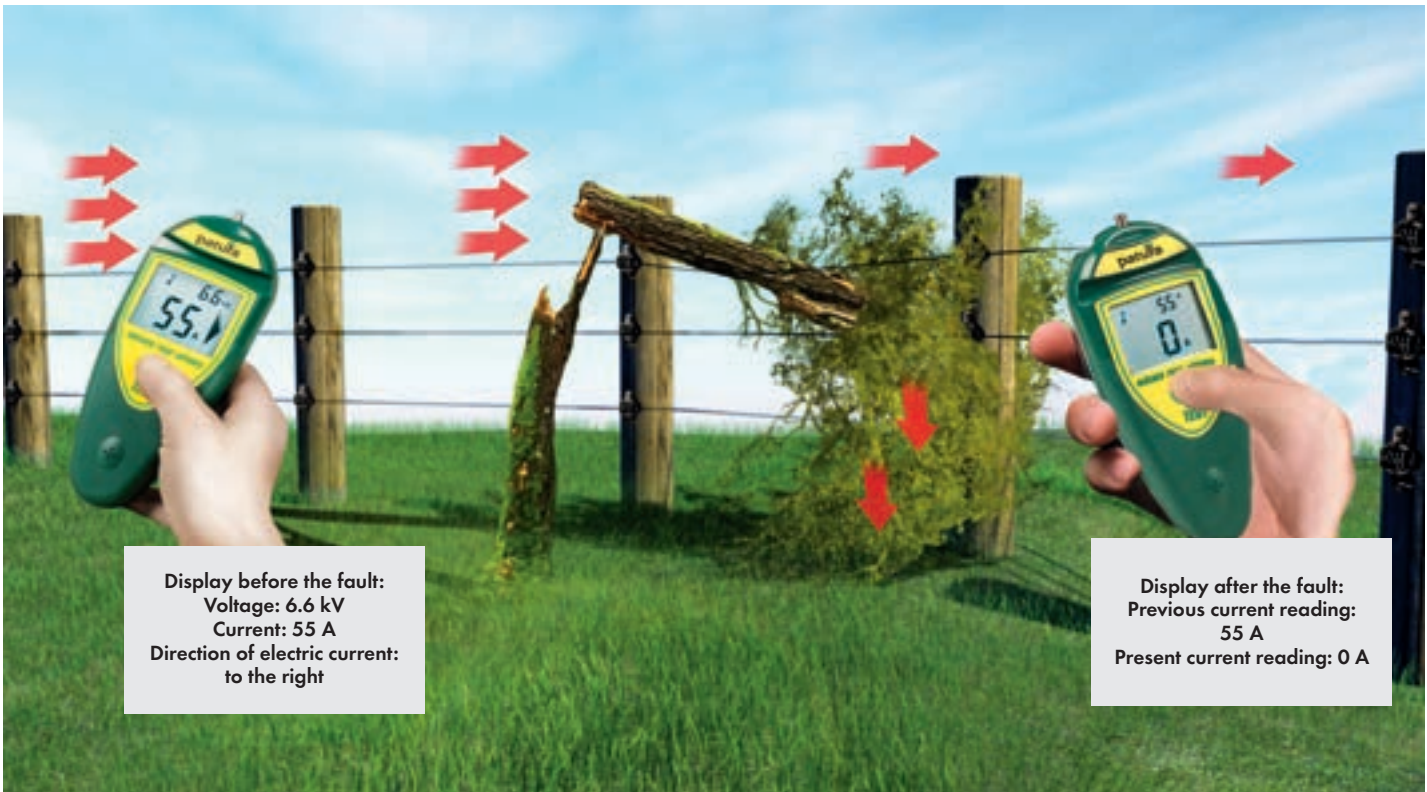
Digital Voltmeter

The ideal measuring instrument with earth stake and fence contacts; digital display; essential for the monitoring of electric fences, their earthing, for fault finding and for checking equipment; with integrated activatable load resistor to simulate animal contact

150302



Slide switch from regular measuring to simulate animal contact



Display before the fault:
Voltage: 6.6 kV
Current: 55 A
Direction of electric current:
to the right

Display after the fault:
Previous current reading:
55 A
Present current reading: 0 A

The Fence Compass will show you via the display the current flow and specific directional arrows in the direction of the fault in the fence. Beyond the fault, the current strength drops towards zero, and the directional arrow disappears.

Fence Compass

Remote Control



- 1 Loudspeaker
- 2 Current direction (to the left)
- 3 Current display (5 amperes)
- 4 Voltage display (6.6 kV= 6600 volts)
- 5 Measuring slot (at the rear) for wires and polywires
- 6 Remote control contact (front)



Fence Compass

Digital voltmeter with ammeter for exact fault analysis on an electric fence; illuminated LCD display, audible current indicator; ideal for use on wire, limited use on polywire, not suitable for polyrope or polytape

150901

Remote Control

Remote control as an upgrade to P 4600, P 6000 and P 8000; includes fence compass, i.e., with digital voltmeter and ammeter for an easy fault finding at the fence; ideal for use on wires; limited use on polywire, not suitable for polyrope or polytape

151001



Wireless Fence Tester (5 levels)

This is the simple and inexpensive way to check the condition of your fence without an earth stake. Powerful LED lights monitor in five stages the current voltage on your fence. With 9 V block battery

150003

Fence Tester (8 levels)

Essential for daily fence monitoring; shows the condition of your fence in eight stages (1000 to 8000 volts); complete with 1.4 m connecting cable and earth stake

150002



Fence Alert

Shows you by means of a flashing light if your fence voltage has fallen too far; visible from up to 1.5 km; two trigger levels; simply clip it on the wire, polywire or polyrope (no earthing required)

150401

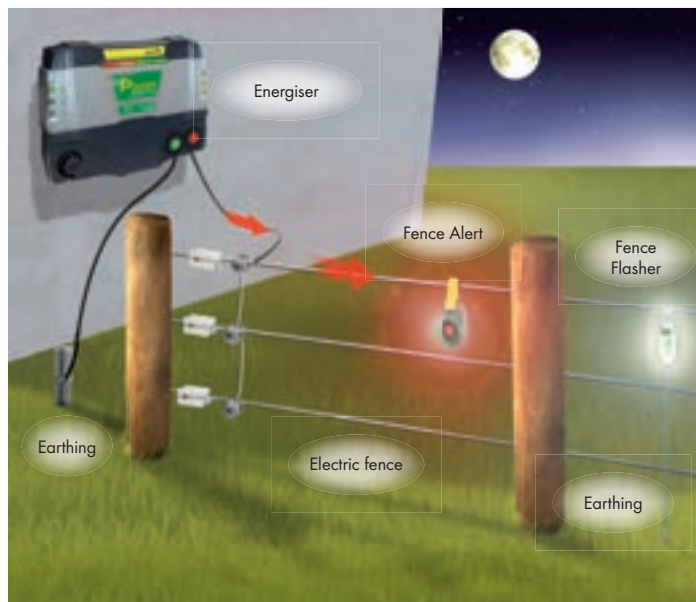


Fence Flasher

The different approach to fence control; is hooked into wire, polywire or rope and is grounded; a flashing light visible at long distances indicates that the fence voltage is over 3000 V; ideal as warning light for fences to deter wild boar

150510

Ideal as warning light for fences to deter wild boar



Fence Alert


The Fence Alert is firmly installed into the electric fence, and provides an alarm by means of a bright red flashing light as soon as the voltage falls to a pre-determined level. There are two trigger levels to choose from. The Fence Alert needs no earth connection. It is powered by a built-in battery.

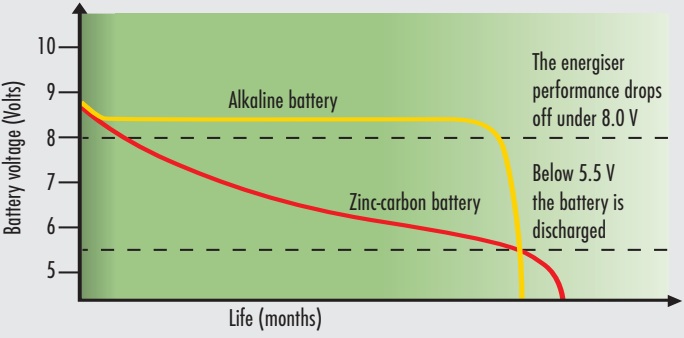
Fence Flasher

The Fence Flasher is firmly installed into the electric fence, and provides information on the fence voltage with every pulse at the point in question (below 3000 V it automatically goes off). In fences that are used to deter wild animals, the Fence Flasher acts as a warning, seen from a distance, which makes the animals aware of the fence in good time.

Place the Fence Alert or the Fence Flasher at a place where you pass by regularly. If there is no or too little voltage on the fence, the Fence Alert is flashing red or the Fence Flasher goes out. You can easily make sure the voltage is working well between this point and the energiser. Install several fence alarm devices at critical points across your paddocks.

PATURA 9 V electric fence battery





The constant voltage supply of PATURA alkaline batteries provides full energiser performance until the very last day.

The correct use of 9 V batteries

All 9 V dry batteries are air-oxygen batteries, i.e. they need oxygen to produce energy.

- Before use be sure to remove the stickers which are covering the air breathers.
- If taking the battery out of service for an extended period of time, reseal the air vents and store the battery in a cool, dry place. (Thus self-discharge is prevented).

PATURA 9 V super alkaline electric fence battery

PATURA super alkaline batteries have a high constant voltage supply throughout their life. Thus it can be assured that throughout this time the energiser will always provide a constant output to the fence. In comparison with a zinc-carbon battery of the same capacity there is more energy stored. PATURA alkaline batteries contain neither mercury nor cadmium. Suitable for storage up to 3 years.



Depending on the amount of current consumption, from a super-alkaline battery 9 V/55 Ah approx. 20% more energy can be drawn, than from a zinc-carbon battery 9 V/55 Ah.



9 V Special Battery

Zinc-carbon battery for energisers

- 151200 9 V/55 Ah
- 151300 9 V/90 Ah
- 151400 9 V/130 Ah



9 V Super Alkaline Battery

The environmentally friendly electric fence battery with constant voltage level; for constant, optimum energiser performance

- 190500 9 V/55 Ah
- 190700 9 V/75 Ah
- 191000 9 V/100 Ah
- 191200 9 V/120 Ah
- 191400 9 V/160 Ah
- 191500 9 V/175 Ah
- 192000 9 V/200 Ah

Batteries and mains adaptors

Along with solar panels, rechargeable batteries are the most environmentally friendly alternative for providing the power for electric fences where there is no mains connection. All 9 V PATURA battery energisers can be powered by a 12 V rechargeable battery. Use rechargeable batteries to supply your electric fences and make a valuable contribution to the environment. Up to 95 % of the materials used in the manufacture of rechargeable batteries can be recycled, whereas the typical 9 V electric fence battery is a throw-away item.

PATURA 12 V glass mat batteries

Starter batteries for cars or trucks have decisive disadvantages if used to power energisers. They have a high self-discharge, and are only cycle proof to a small degree. i.e., they will stand for markedly fewer charge-discharge cycles. PATURA glass mat batteries for 12 V energisers and solar installations are totally maintenance-free and function independent from locations. They have a low self-discharge and are especially cycle-proof.

The correct use of 12 V batteries

Correct handling is important for extending the life of rechargeable batteries.

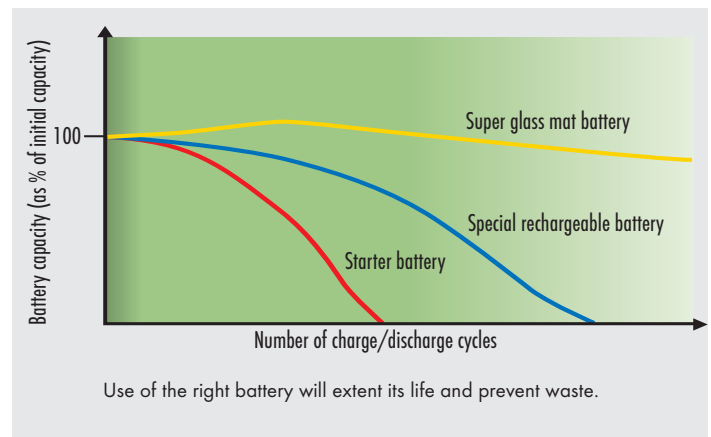
- Standard/special batteries are dry charged, and require to be filled with normal trade-standard battery acid before use.
- Recharge batteries in due time, and always recharge them fully.
- Never over-charge batteries (use an automatic battery charger)
- With standard/special batteries check the acid level every 4 weeks and fill up with distilled water as required.
- If taking the battery out of service for an extended period, charge the battery fully, then top up the charge after 8 weeks.

Note: all 12 V lead batteries can suffer from deep discharge due to conventional energisers, which can lead to the destruction of the battery. PATURA energisers with built-in deep discharge protection reliably prevent this.

Capacity of batteries

How long does my 12 V battery last?

- We state the capacity of all our rechargeable batteries based on 100 hours standard discharge. A battery is completely discharged after 100 hours and the extracted capacity is determined: This is referred to as capacity C100
- Calculation of battery life:
 1. Usable capacity = nominal capacity x 65 % e.g. 80 Ah x 65 % = 52 Ah
 2. Current consumption of energiser: e.g. 0.125 A
 3. Operation period (hours) = capacity/current consumption;
52 Ah/0.125 A = 416 h



Practical tips in the use of 12 V batteries

- Buy 2 small batteries (e.g. 12 V / 45 Ah) rather than one large one.
- For charging, use the 12 V – 2.7 A automatic battery charger.
- Always leave one battery attached to the charger, so that it is always charged. Change the battery in the energiser as soon as the battery indicator lights illuminate.
- The battery will reward you by providing a long life, and thus saving you money.

Battery Guard

Checks battery capacity easily using smartphone via bluetooth. App included (suitable from Android 4.3, iPhone 4S and Windows 10)

150602



Battery Capacity

Battery voltage





Automatic Battery Charger 7 A

For all 12 and 24 V batteries; fully-automatic battery charging with electronic over-charging protection; 7 operating modes including boost function; incl. 3-way cable set and pouch

150207 12 V/24V - 7 A



Automatic Battery Charger 2.7 A

Ideal for glass mat batteries, and especially for the 25 Ah glass mat battery. Totally protective charging for your batteries; with electronic over-charging protection; also suitable for normal 12 V batteries but note longer charging time.

150201 12 V - 2.7 A



Mains Adaptor 1.5 A

For the operation of all 9 V and 12 V PATURA battery energisers from a 230 V socket; for 9 V energisers an additional 12 V lead set is required (Ref. 159101); universal plug for: P15, P20, P40, P50, P60; PATURA plug for: P1 - P5, P1500 - P3800, P4500, P4600, P5000, P6000; for indoor use only

150210 with PATURA plug
150220 with universal plug



Battery acid

For all PATURA 12 V standard and special wet-cell batteries

1 liter
133001

Reference	Acid (L)
133400	approx. 2.6
133500	approx. 3.8
133510	approx. 4.7
133700	approx. 4.0
133800	approx. 3.2
133900	approx. 5.0



Delivery only to commercial customers after prior registration



Glass mat battery
leakproof - maintenance-free;
no acid necessary;
ready to use

Super Glass Mat Battery

The ideal maintenance-free battery, regardless of installation position; for 12 V energisers; with carry handles (88/100 only); also for 9 V energisers, which can operate with 12 V as well (32 Ah only: must be installed laying on its side)

12 month guarantee

32 Ah (C100): l x w x h: 166 x 175 x 125 mm; weight: 8.9 kg
50 Ah (C100): l x w x h: 197 x 165 x 170 mm; weight: 15.6 kg
88 Ah (C100): l x w x h: 350 x 166 x 174 mm; weight: 23.8 kg
100 Ah (C100): l x w x h: 350 x 166 x 174 mm; weight: 25.2 kg

133200 12 V/32 Ah
133100 12 V/50 Ah
133600 12 V/88 Ah
133610 12 V/100 Ah

NEW



Special Wet-Cell Battery

Wet-cell battery for battery energisers and solar installations; low self-discharge, high cycle stability; delivered without battery acid, dry charged;

6 month guarantee

80 Ah (C100): l x w x h: 240 x 175 x 188 mm; weight with / without acid: 16 / 11 kg
100 Ah (C100): l x w x h: 278 x 175 x 190 mm; weight with / without acid: 20 / 15 kg
130 Ah (C100): l x w x h: 353 x 175 x 190 mm; weight with / without acid: 27 / 20 kg

133800 12 V/80 Ah
133700 12 V/100 Ah
133900 12 V/130 Ah



Standard Wet-Cell Battery

The cost-effective wet-cell battery, for use with 12 V battery energisers; delivered without battery acid, dry charged;

6 month guarantee

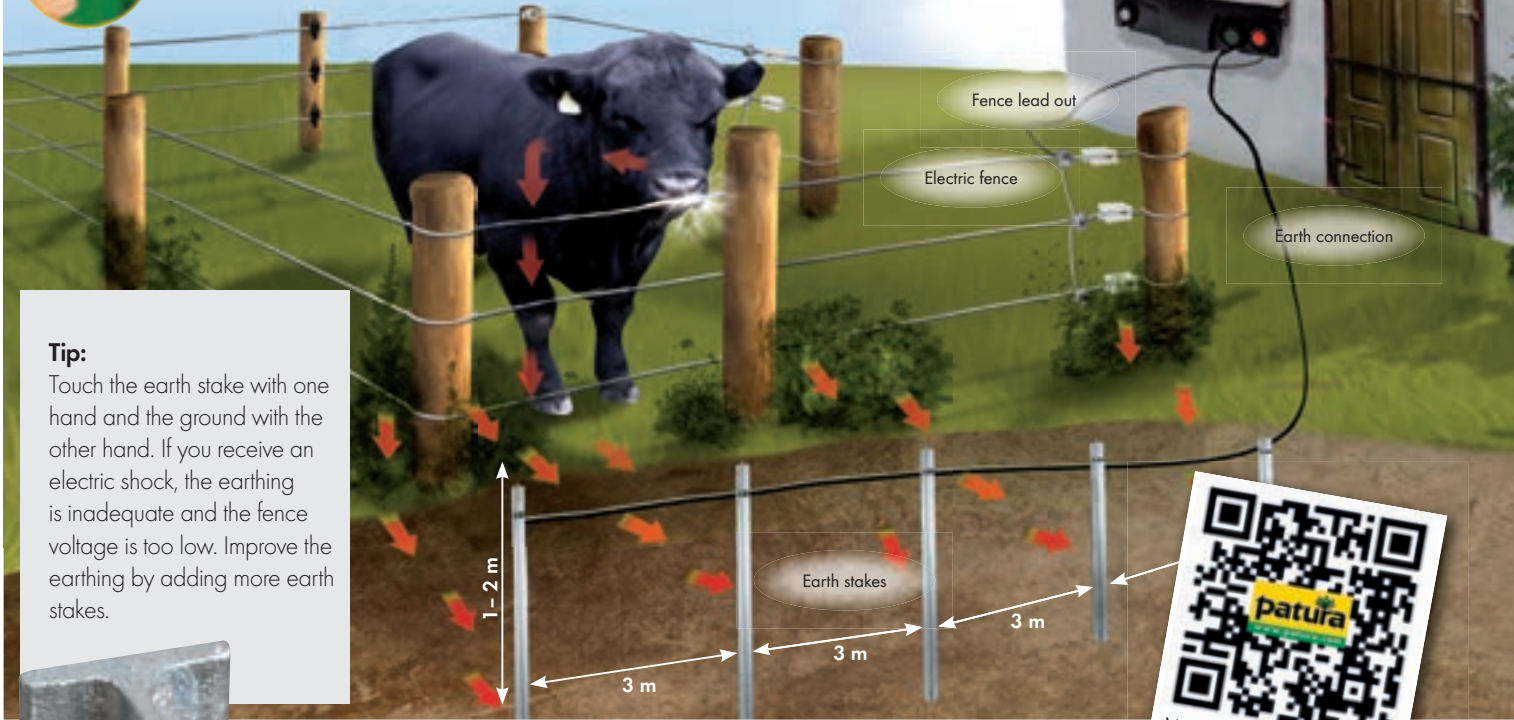
45 Ah (C100): l x w x h: 216 x 175 x 175 mm; weight with / without acid: 12 / 8 kg
84 Ah (C100): l x w x h: 277 x 175 x 190 mm; weight with / without acid: 18.5 / 13 kg
125 Ah (C100): l x w x h: 353 x 175 x 190 mm; weight with / without acid: 22.6 / 17.3 kg

133400 12 V/45 Ah
133500 12 V/84 Ah
133510 12 V/125 Ah



Make sure you earth everything properly!

Over 80% of installed earthing systems are inadequate. The minimum number of earth stakes for each particular energiser is given in the tables for the particular energisers.



Tip:

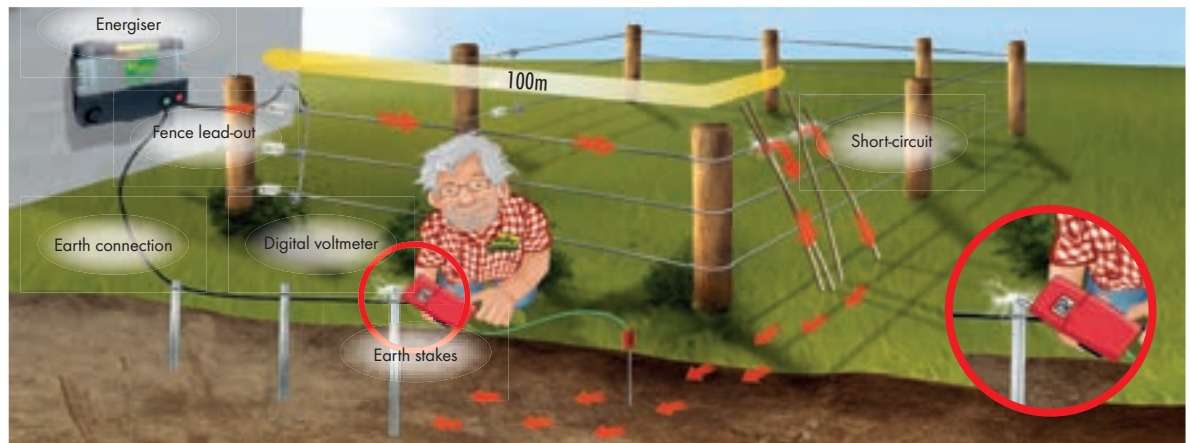
Touch the earth stake with one hand and the ground with the other hand. If you receive an electric shock, the earthing is inadequate and the fence voltage is too low. Improve the earthing by adding more earth stakes.



Earth stakes – the key accessory

Monitoring the earth

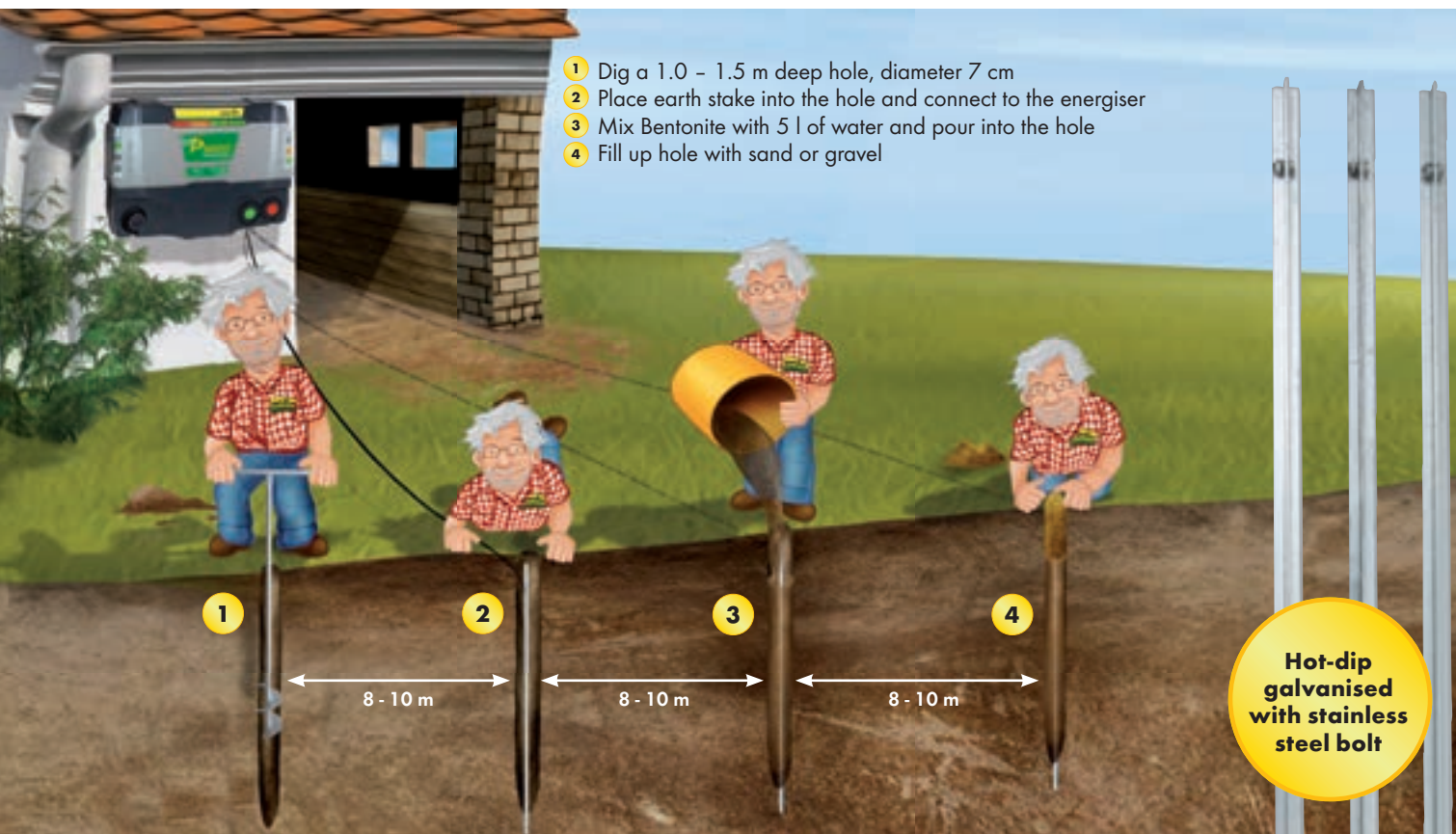
If the earth system of an energiser is inadequate, current can be measured between the earth stake and the surrounding soil or an electric shock can be felt when touching the earth system. The earth system of an energiser should be checked at the time of installation and with permanently installed energisers at least once a year (preferably during dry soil conditions).



Regular earth monitoring especially during dry soil conditions provides high safety at the fence.

Test procedure:

- Short circuit the fence by putting steel posts into the ground approximately 100 m away from the energiser, and lay them against the fence wires. This should lower the fence voltage to 2000 volts.
- Use a digital voltmeter and insert its earth probe into the ground approx. 1 m away from the energiser's last earth stake. Touch the energiser's last earth stake with the measurement contact of the digital voltmeter.
- The digital voltmeter indicates the earth voltage when the energiser is switched on:
- 0 to 200 volts (0.2 kV to 0.6 kV display): The earthing is perfect
- 200 to 600 V (0.2 kV to 0.6 kV display): The earthing is still acceptable
- Over 600 volts: The earthing needs to be improved by adding more and, if necessary, longer earth stakes, thereby increasing the fence voltage and the safety of the fence.



- 1 Dig a 1.0 - 1.5 m deep hole, diameter 7 cm
- 2 Place earth stake into the hole and connect to the energiser
- 3 Mix Bentonite with 5 l of water and pour into the hole
- 4 Fill up hole with sand or gravel

Hot-dip galvanised with stainless steel bolt

Bentonite-earthing set: The solution for difficult earthing situations



Bentonite - Special Earthing Mixture

Provides perfect earthing particularly in poor earthing conditions. Stainless steel earth stake (ref. 161601) needs to be ordered separately

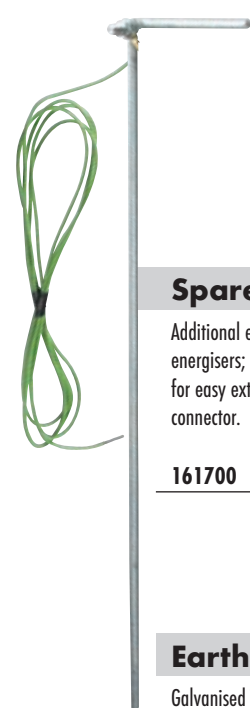
161606

Stainless Steel Earth Stake

The ideal, absolutely rust-free earth stake to be used together with the Bentonite-Special-Earthing-Mixture; with welded-on stainless steel connector screw; Ø 10 mm

161601 1.5 m

INOX



Spare Earth Stake

Additional earth stake especially for small battery energisers; hot-dip galvanised, 0.65 cm long, with handle for easy extraction and 3 m cable with 3 mm probe connector.

161700

Earth Stake

Galvanised T-angle-iron, with stainless steel screw for attaching the earth connection.

161800 1.0 m

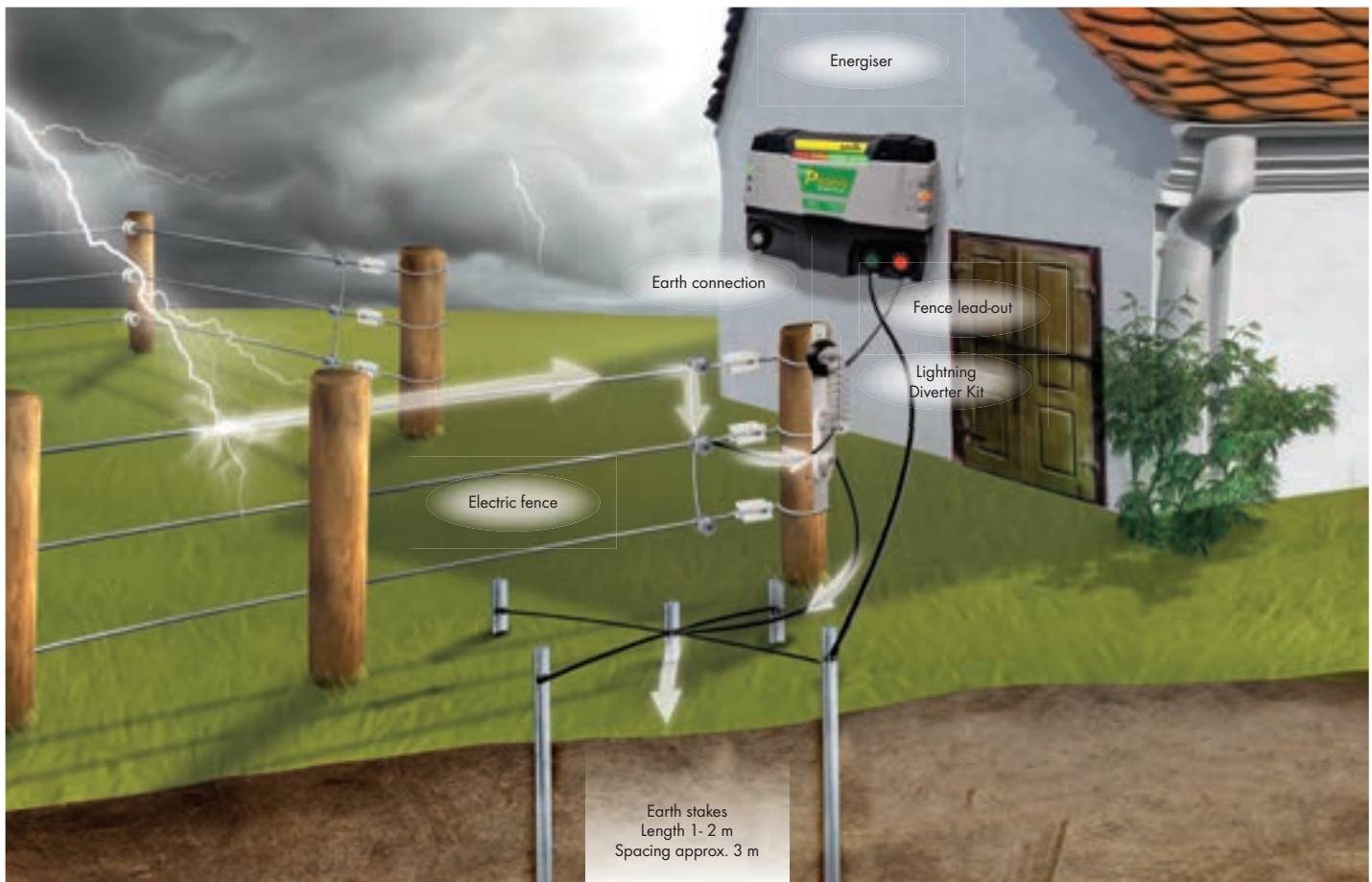
161801 1.5 m

161802 2.0 m

Screw-In Earth Stake

Hot-dip, galvanised screw-in earth anchor, for fast and easy installation and uninstallation of earth systems for portable fences; including screw-in lever and joint screw; hot-dip galvanised; length: 56 cm; Ø 7.5 cm

161710



Lightning protection systems

International standard requirements:

"Energisers for the operation of electric fence installations on pastureland may not be installed in buildings that are susceptible to fire such as barns, hay lofts and stables. To protect against lightning damage, a lightning protection system (spark gap with earthing) must be built into the fence lead-out before the introduction of that lead-out cable into the building."

The construction of the earth system for the lightning diverter is new. It has been shown that the star-shaped set of earth stakes has a considerably greater attraction to lightning than similar ones laid out in a line. Please ensure that the lightning diverter and the energiser are connected to one and the same earth system, whereby the lightning diverter is connected to the central earth stake, and the energiser to one of the outer ones.



Lightning Diverter Kit

For mounting on a wall or fence post; protects your energiser by leading the lightning to the ground; required by international standards where energisers are installed indoors; order earth stakes and connecting cable separately.

164801

Surge Protector Plug 230 V

Protects your energiser against lightning damage from a surge through the mains; simply place between the energiser and the mains socket.

164901

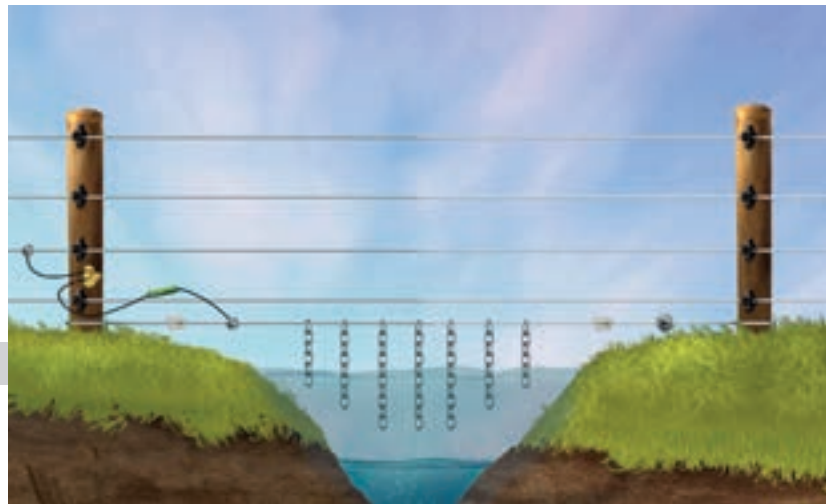




Energy Limiter

For energy limitation in fence sections when crossing ditches subject to flooding

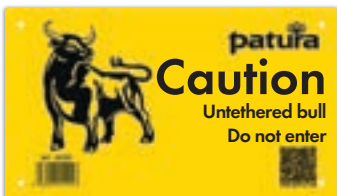
150610



**Warning Sign -
Do not feed the animals**

"Do not feed the animals"

160103 Plastic



**Warning Sign -
Untethered bull**

"Caution: Untethered bull"
Safety organisations recommend that this sign is displayed if there is a free-running bull in the herd

160203 Plastic



**Warning Sign -
No trespassing!**

"No trespassing"

160213 Plastic



Two-Circuit Fence Switch

To turn on and switch between two fence systems with one switch.

Four positions are possible:

"0": both fences are turned off.

"I": Fence 1 is turned on.

"II": Fence 2 is turned on.

"I+II": both fences are turned on.

160702



Cut-Out Switch

For switching the current on and off independently of the energiser, and for switching individual paddocks on or off.

160701

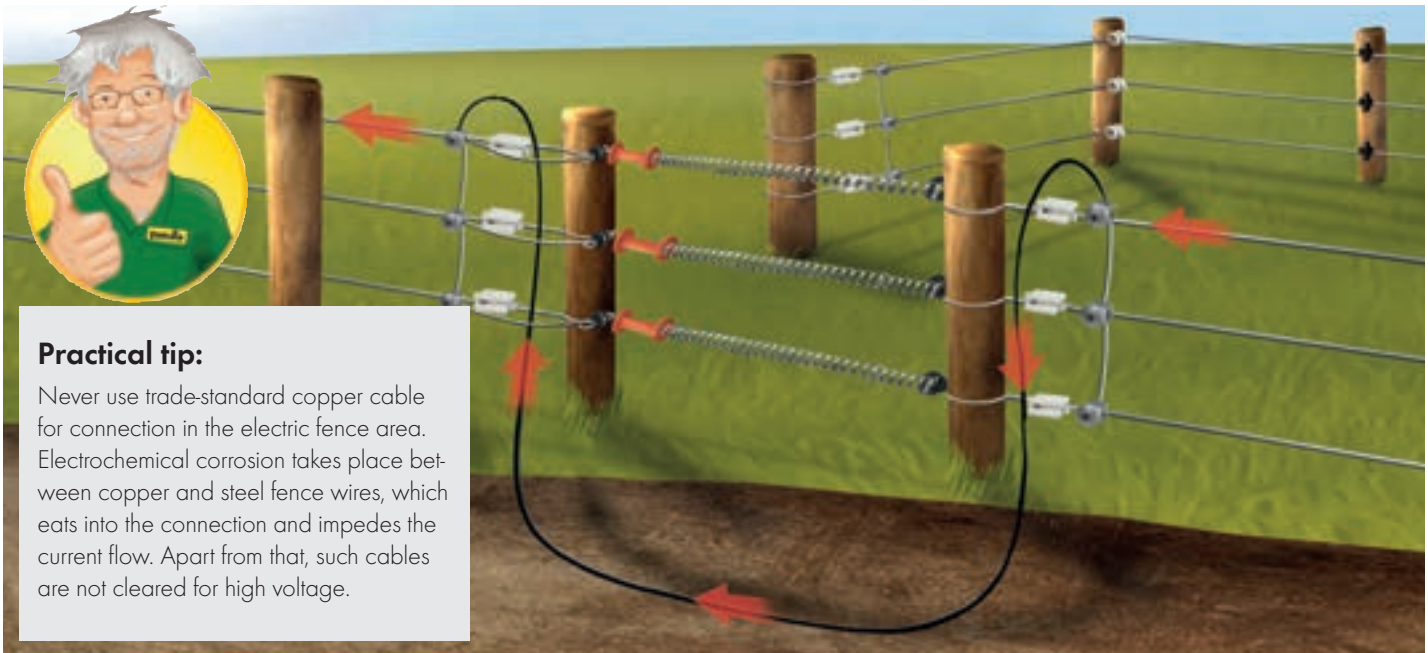
"Caution: Electric Fence"

International standards require that warning signs be placed at clearly visible points 100 m apart, at junctions with byways, as well as at points where the existence of an electric fence would not be expected



**Warning Sign -
Electric Fence**

- ① 160001 Plastic, printed on both sides
- ② 160010 Plastic, printed on both sides, 5 languages
- ① 160011 Aluminium, printed on both sides



Practical tip:

Never use trade-standard copper cable for connection in the electric fence area. Electrochemical corrosion takes place between copper and steel fence wires, which eats into the connection and impedes the current flow. Apart from that, such cables are not cleared for high voltage.

Never run the current through the gate itself from one side to the other (other than for gate security using an alarm installation). The current should always be carried underground using high-voltage cable attached to either side of the gate.

Cables and screws

The electrical connections on an electric fence take on a special meaning. A bad connection can mean that beyond the connection there is no trace of a shock – or only a very reduced one. All connections on a permanent electric fence must be screwed. Only galvanised (preferably hot-dip galvanised) or stainless steel should be used for screws or clamps. Any rust at a connection acts as an insulator, i.e., the current flow is impeded and the fence voltage drops.

Electrical connections

Principally, with an electric fence we differentiate between two types of connection:

- The cross-connection between two wires
- The in-line connection of the wire itself

The cross-connection is purely an electrical connection, and should have no tension associated with it. All electrical cross-connections on an electric fence should be carried out by means of galvanised, non-rusting screws. Cross-connections of all fence wires should be carried out every 200 to 400 m. In-line connections of wires, polywires or polyropes should be done using knots which self-tighten under load. Figure-of-eight or reef knots have proved themselves in this respect. In the case of wires and polywire these knots provide an optimal electrical connection. This also works easily and perfectly with the joint clamps and screws for steel wire. For polywires and polyrope, rope and angle clamps or polywire joiners are used.



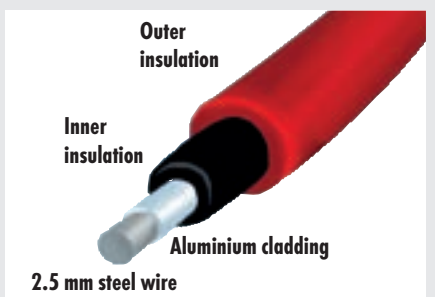
A minor investment for 2 wire joint screws for every fence section of 200 m ensures that all permanent electric fences have effective animal control to the very end of the fence.



TOP: Figure-eight knot, BOTTOM: Reef knot. The ideal solution for in-line connection of wires and polywires

Underground cable and lead-out cable

PATURA high-voltage electric fence cable is double insulated and high voltage proof to over 25,000 volts. It can be used for above- and underground lead-outs, for the connection of earth stakes and for carrying current past gates. For distances up to 50 m the 1.6 mm diameter version is sufficient. For distances over 50 m the strong, high conductivity 2.5 mm cable should be used.



The PATURA high-voltage cable with aluminium coating provides optimum conductivity due to the high aluminium content.



High Voltage Cable 2.5 mm

High voltage-proof, double insulated, single-core cable with 2.5 mm steel core; for fence and earth lead-outs over 50 m; resistance 0.035 ohms/m.

- 161050 50 m roll
- 161060 100 m roll
- 161070 200 m roll



Superior conductivity due to aluminium



High Voltage Cable Aluminium 2.7 mm

Aluminium shrouded

High voltage-proof, double insulated, single-core cable with aluminium shrouded 2.5 mm steel core; for low-loss fence and earth lead-outs over 50 m; resistance 0.011 ohms/m.

- 161160 100 m roll



High Voltage Cable 1.6 mm

High voltage-proof, double insulated, single-core cable with 1.6 mm steel core; for fence and earth lead-outs up to 50 m, or for by-passing gates; resistance 0.1 ohms/m.

- 160910 10 m roll
- 160925 25 m roll
- 160950 50 m roll
- 160960 100 m roll

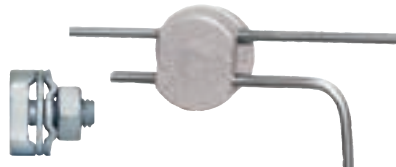


Principally, for the PATURA P8000 Tornado Power, we recommend the use of high voltage aluminium cable 2.7 mm

Recommendation for high voltage cable		
	Diameter - Fence lead-out cable	
	Energiser capacity under 5 joules	Energiser capacity over 5 joules
0 - 50 m	1.6 mm	2.7 mm Aluminium
50 m - 200 m	2.5 mm	2.7 mm Aluminium
over 200 m	2.7 mm Aluminium	2.7 mm Aluminium



New design



Joint Clamp

New coating for increased corrosion resistance; for electrical cross-connection of several wires or for connecting the high-voltage cable with the fence.

- 160605 (qty 5)
- 160625 (qty 25)

Joint Screw

New coating for increased corrosion resistance; for electrical cross-connection of several wires or for connecting the high-voltage cable with the fence.

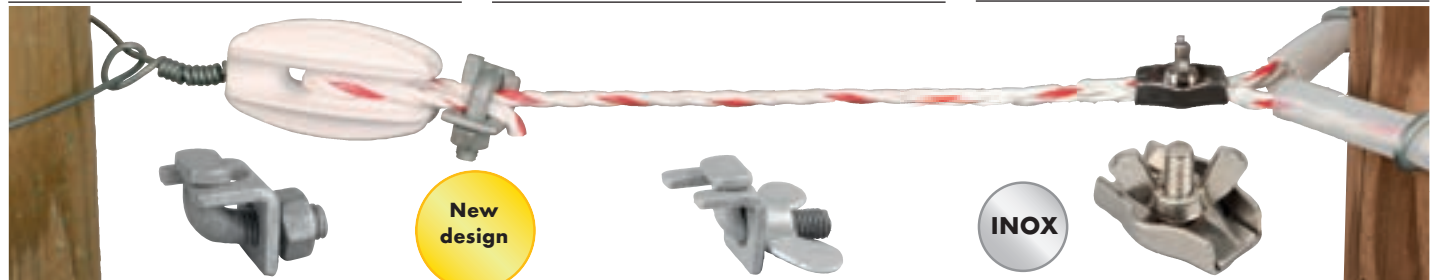
- 169605 (qty 5)
- 169625 (qty 25)



Connector for High Voltage Cable

For high voltage, waterproof connection of electric fence High Voltage Cable 1.6 - 2.7 mm

- 160810



New design

Angle Clamp

New coating for increased corrosion resistance; ideal for connecting, clamping and for electrical cross-connection of rope

- 169505 (qty 5)
- 169525 (qty 25)

Angle Clamp

New coating for increased corrosion resistance; ideal for connecting, clamping and for electrical cross-connection of rope

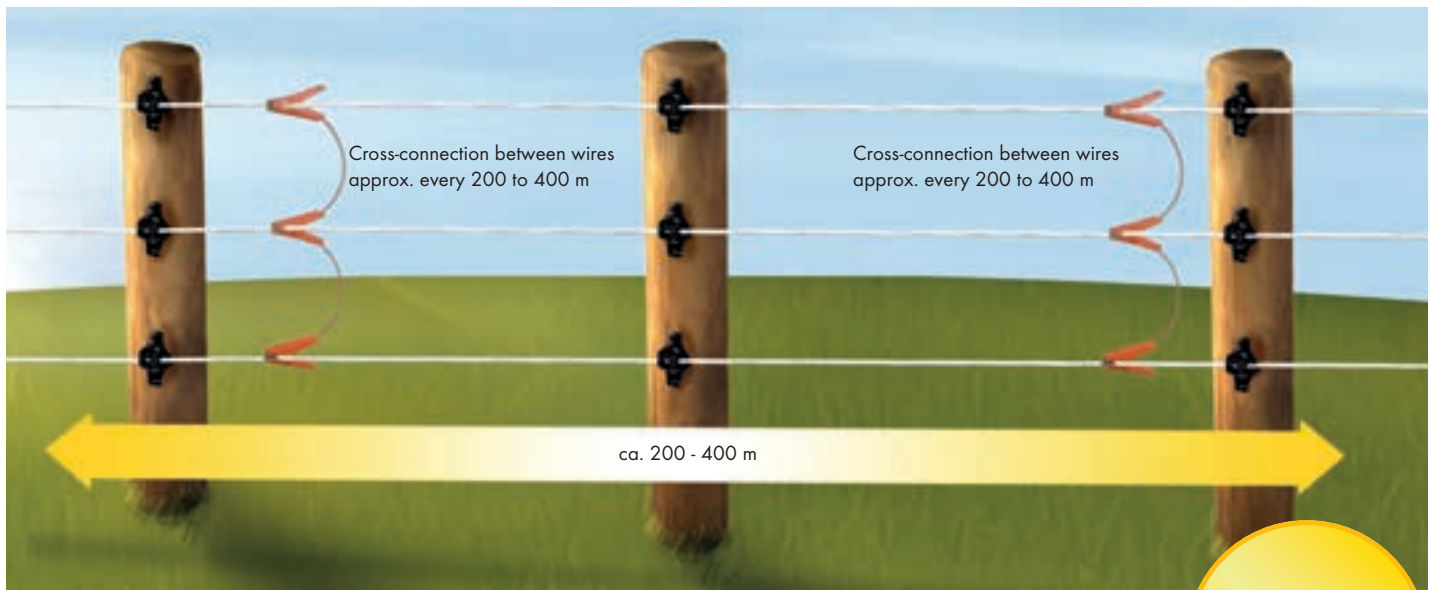
- with wing nut
- 169705 (qty 5)
- 169725 (qty 25)

INOX

Rope Clamp

Stainless steel; ideal for the connection, clamping and for the electrical cross-connection of polyrope.

- 160405 (qty 5)



On electric fences all wires should be interconnected crosswise at regular intervals of approx. 200 - 400 m. Ideal positions for these connections are at the beginning and the end of the fence and at corners.
 Tip: all connection cables should be positioned right next to a post to prevent the wires from sagging.



Connection cable

The electrical connections on an electric fence take on a special meaning. A bad connection can mean that there is no trace of a shock beyond the connection – or only a very reduced one. All connections on an electric fence must have tight contact. Only stainless steel clamps should be used. Any rust at a connection acts as an insulator, that is, the current flow is impeded and the fence voltage drops.

Electrical connections on temporary fences

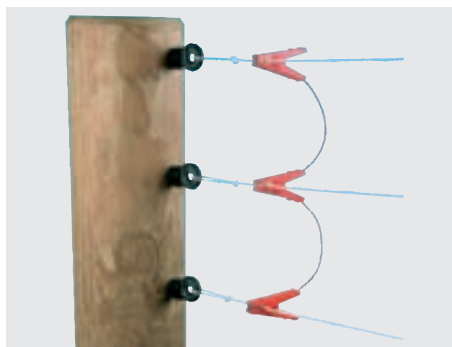
Principally, with an electric fence we differentiate between two types of connection:

- The cross-connection between two wires
- The in-line connection of the wire itself

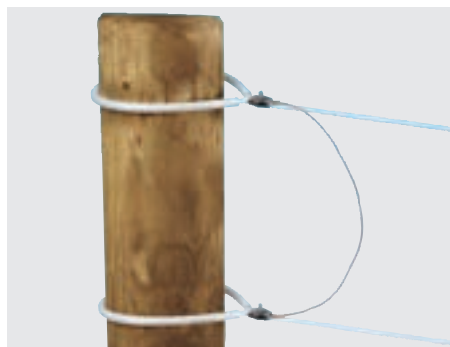
The cross-connection is purely an electrical connection, and should have no tension associated with it. On temporary fences all electrical crossconnections are carried out using fence connecting cable with spring-loaded stainless steel clips or connector plates. For fences with wires that remain in the same location for a longer period of time or are heavily overgrown, we recommend stainless steel connectors. Cross-connections of all fence wires should be carried out every 200 to 400 m. Special connectors are available for in-line connections of polywire, polyrope or polytape. Please see the following pages for more information.

Regardless whether polywire, polyrope or polytape - PATURA always offers the suitable connecting cable

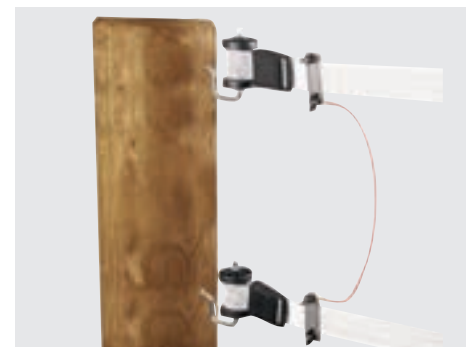
For each fence wire material we offer the proper connection technology. All connections must be implemented with high contact pressure. This is ensured with springs or clamping screws. The use of stainless steel PATURA cables ensures permanent conductive connections.



Fence connecting cable with spring-loaded clips provides optimum cross-connections for temporary polywire fences.



Fence connecting cable - polyrope - with (SS) polyrope clamp provides optimum cross-connections for temporary polyrope fences.



Fence connecting cable - polytape - with (SS) connector plates provides optimum cross-connections for temporary polytape fences.

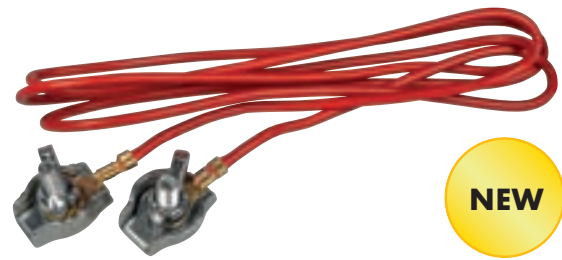


INOX

Fence Connecting Cable

with insulated spring clips and stainless steel contacts; quick wire connection for temporary multi-wire fences

- 2-wire, (qty 2)
101102
- 3-wire, (qty 2)
101202
- 4-wire, (qty 1)
101301



INOX

NEW

Fence Connecting Cable Polywire

for establishing cross-connections on polywire fences up to 3 mm

- 2-wire, (qty 1)
101103
- 3-wire, (qty 1)
101203

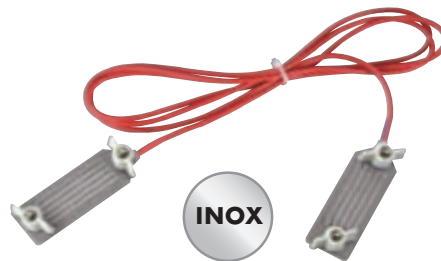


Fence Connecting Cable for Rope

for ropes up to 6 mm; for establishing cross-connections on polyrope fences

- 2-wire, (qty 1)
101401
- 3-wire, (qty 1)
101402

NEW



INOX

Fence Connecting Cable Polytape

Steel
for tapes up to 40 mm;
rapid cross-connection for multi-wire polytape fences

- 2-wire, (qty 1)
170401
- 3-wire, (qty 1)
170402

NEW



Fence Connecting Cable Polytape

Plastic
for tapes up to 40 mm

- 2-wire, (qty 2)
101502



INOX

Earth Stake Connecting Cable

With insulated spring clips and stainless steel contacts; quick and easy connection with earth stakes for battery energisers; length: 3.0 m

- 160990 with stainless steel spring clips
- 160995 with 8 mm eyelets

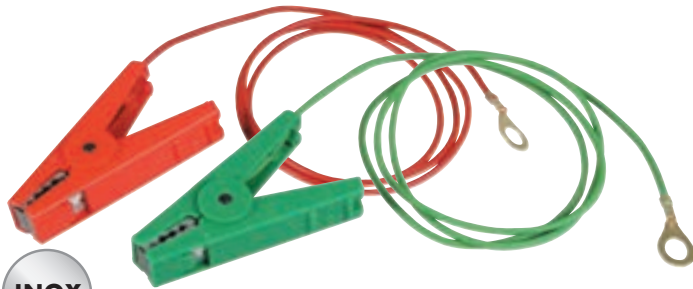


INOX

Spring Clip

Spare spring clips suitable for all PATURA connecting cables, stainless steel

- 919001 red (qty 1)
- 919002 black (qty 1)
- 919003 green (qty 1)



INOX

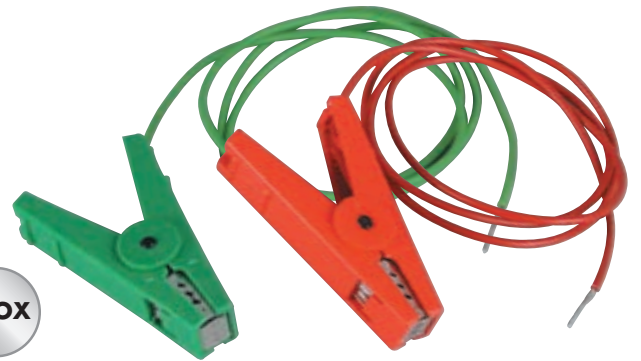
Fence and Earth Lead Set with Eyelet

Insulated spring clips (red = fence / green = earth) with stainless steel contacts and 8.0 mm eyelets; for PATURA Energisers P15, P25, P35, P50, P70, P140, P100 - P300, P250 - P450, P1000 - P4000

2 Lead Connectors, red and green
100901

Fence Lead Connector, 8 mm Eyelet, red
100101

Earth Lead Connector, 8 mm Eyelet, green
100501



INOX

Fence and Earth Lead Set with Probes

Insulated spring clips (red = fence / green = earth) with stainless steel contacts and 3.0 mm probes; for PATURA energisers P20, P40, P60, P1 - P5, P1500 - P3800, P4500/P4600, P5000 and P6000

2 Lead Connectors, red and green
101001

Fence Lead Connector, 3 mm Probe, red
100301

Earth Lead Connector, 3 mm Probe, green
100601

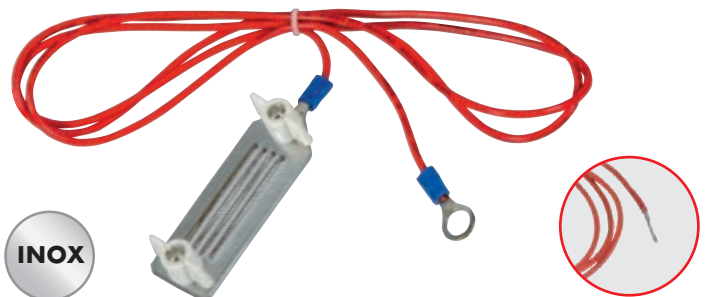


INOX

Fence Lead Connector for Rope

with stainless steel polyrope clamps; for ropes up to 6 mm; for connecting the energiser to polyrope fences

100701 8 mm eyelet
100801 3 mm probe

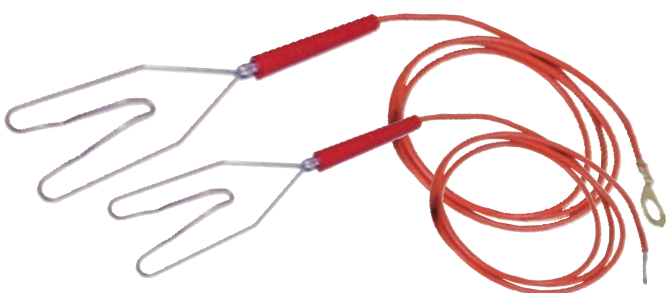


INOX

Fence Lead Connector Polytape

Stainless steel clamping plate
for tapes up to 40 mm; for connecting the energiser to polytape fences

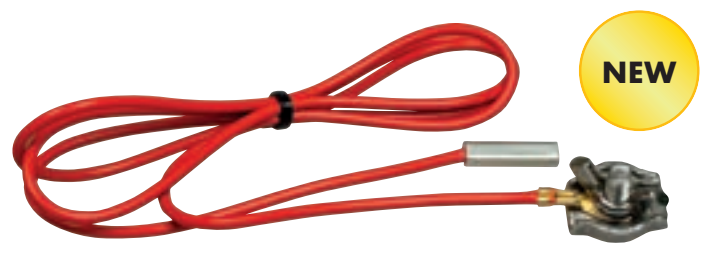
170501 8 mm eyelet
170601 3 mm probe



Fence Lead Connector with Heart Clip

Chrome-plated universal heart-shaped clip suitable for wire, polywire, rope and tape up to 40 mm; 8 mm eyelet or 3 mm probe
Eyelet: for PATURA Energisers P15, P25, P35, P50, P70, P140, P100 - P300, P250 - P450, P1000 - P4000
Probe: for PATURA Energisers P20, P40, P60, P1 - P5, P1500; P3800; P4500/P4600, P5000 and P6000

100201 8 mm eyelet
100211 3 mm probe



Fence Lead Connector for Polywire

With stainless steel clamp; for polywire up to 4 mm; for connecting the energiser to polywire fences; for PATURA P20, P40, P60, P1 - P5, P1500 - P3800, P4500/P4600, P5000 and P6000

100401 3 mm probe



Polytape Buckle

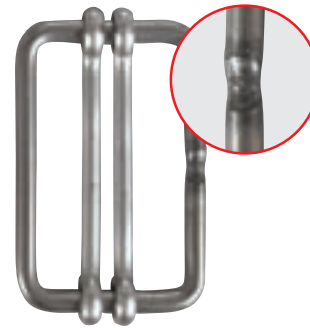
Plastic

Easily adjustable start and end connection for polytapes, allows rapid retensioning of the tapes, not suitable for electrical connections!

12.5 mm, (qty 5)
103605

20 mm, (qty 5)
103705

40 mm, (qty 3)
103803



Tape Joiner

stainless steel

Good connection, no corrosion, optimum current flow

10 - 12.5 mm, (qty 5)
103305

20 mm, (qty 5)
103405

30 - 40 mm, (qty 5)
103505



INOX

12 V Lead Set for 9 V battery

For connecting all PATURA 9 V dry-cell battery energiser to 12 V battery or mains adaptor (to connect to mains adaptor remove spring clips).

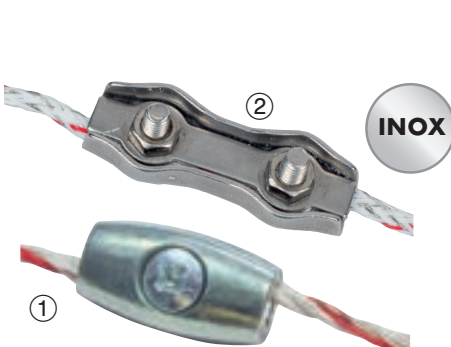
159101



12 V Lead Set

for connecting following PATURA multi-function energiser to 12 V batteries: P1 - P5; P1500 - P6000

9187225



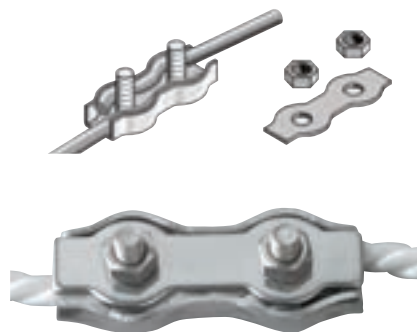
INOX

Polywire Joiner

for secure connection of all electric fence polywires

① **Single (galvanised)**
For polywire up to 2,5 mm
160505 (qty 5)
160510 (qty 10)

② **Double (stainless steel)**
For polywire up to 3,5 mm
164705 (qty 5)

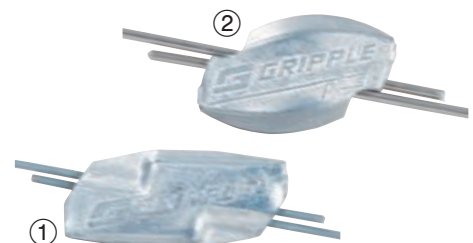


Rope Joiner

For polyropes up to 6 mm

galvanised
103205 (qty 5)
103210 (qty 10)

stainless steel
103903 (qty 3)
103910 (qty 10)



Joiner for steel wire

① **1.6 mm**
Suitable for 1.40 - 2.20 mm steel wire
190205 (qty 5)
190220 (qty 20)

② **2.5 mm**
Suitable for 2.00 - 3.25 mm steel wire and for HippoWire
190105 (qty 5)
190120 (qty 20)

