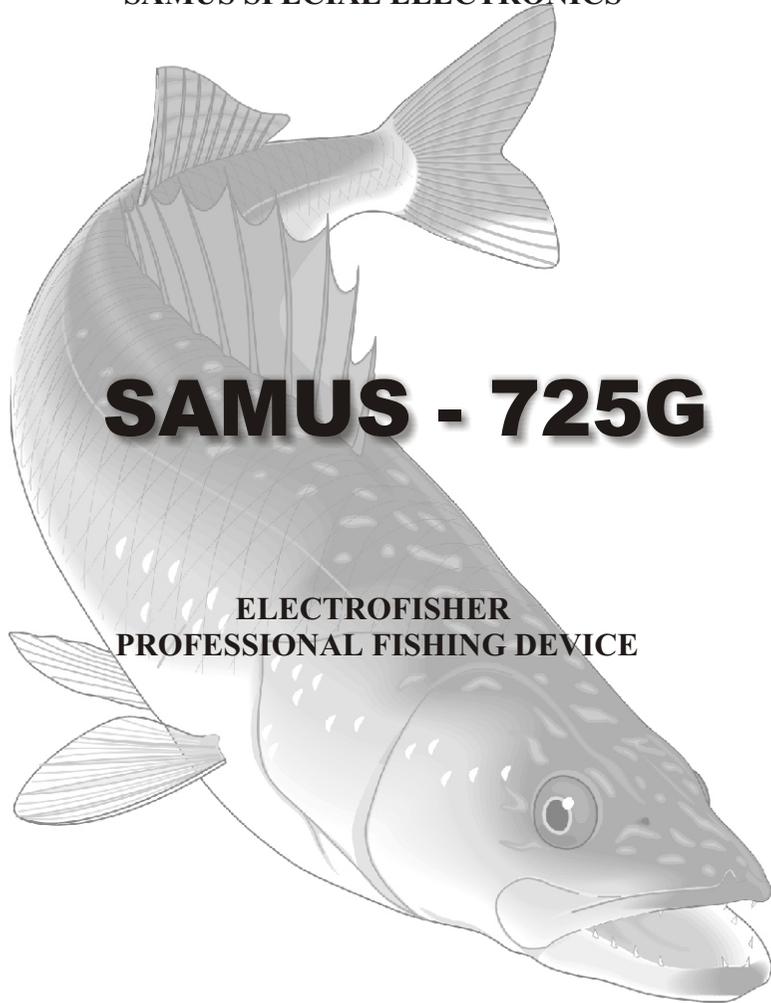


**SAMUS SPECIAL ELECTRONICS**



**SAMUS - 725G**

**ELECTROFISHER  
PROFESSIONAL FISHING DEVICE**

## **INSTRUCTIONS - MANUAL**

European standard EN-60335-2-86 Safety of household and similar electrical appliances Part 2-86: Particular requirements for electric fishing machines (IEC 60335-2-86: 1998 modified)

Dear user ! You have purchased a modern electrofisher SAMUS-725G designed for electrofishing in freshwater lakes and rivers.

This model has a built-in microcomputer that gives you the higher reliability, many service functions, efficiency and satisfaction while working with our electrofisher. Its parameters are taken in such a way to enable high levels of fishing and minimise harmful influence of electric field on water fauna.

In the course of designing SAMUS-725G we have used long-term experience of a firm "SAMUS Special Electronics" in this field as well as experience of our colleagues who also project and fish by the means of similar instruments.

### **ELECTROFISHER SET - SAMUS-725G**

The set of electrofisher SAMUS-725G consists of:

- Electrofisher SAMUS-725G
- Cable of steering with press-release button and micro-switcher
- Outer cable "-" with metal wire at the end
- Outer cable "+" for installation in the landing net
- This manual

For complete electrofishing you need only any plastic landing net, 12 Volt battery ( accumulator) and any boat to move on the water. Electrofishing from the bank is not effective.

### **TECHNICAL DESCRIPTION OF SAMUS-725G**

- Built on MOSFET transistors.
- Voltage of inverter 550-600 Volt- Impulse aperiodic up to 1000V
- 650 watts of output power ( in order to achieve high-reliability )

Electrofisher has a built-in microcomputer, which allows to regulate frequency and duration (length) of impulses by the means of keyboard and also indicates on digital display:

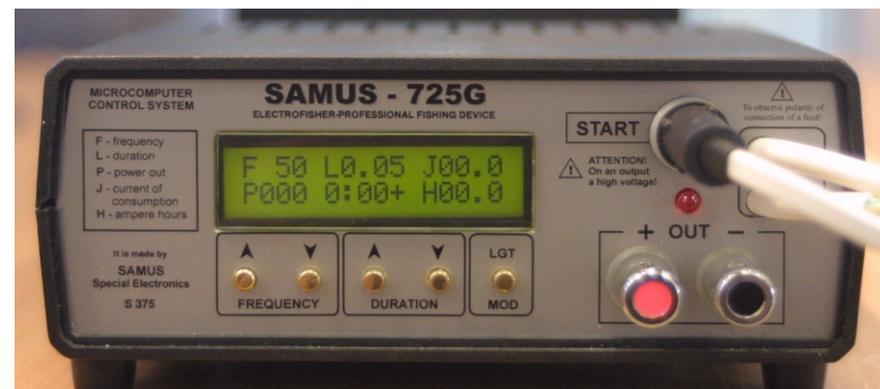
- Frequency and duration ( length) of going out electric impulses ( frequency and duration of output impulses are stable, does not depend on power supply voltage or loading)
- Exit power in watts

- Consumed current in the amperes
  - Quantity of used ampere-hours from battery
  - Time of electrofishing
  - Indicator of battery unloading
  - Blackout of display panel in case of night fishing (optional)
- Device is switched by inserting a password which protects from unauthorised use ( there is another password which after inserting the electrofisher does not give high voltage- only display panel is on- this function is necessary for some countries where electrofishing is restricted)
- Overload protection.
  - Dimensions (box of 210X180X75 )
  - Weight < 1,6 kg ( without battery)
  - Power supply from battery from a UPS or from a car battery (7-10 Ah battery sufficient on 2-3 hours of electrofishing).

**Main technical features of electrofisher SAMUS725G:**

Input Voltage	12 VDC Nominal Range ( 10-14 VDC)
Input Current	5-65 Anps ( common operating 10-20 Anps)
Output Voltage	1000 V max ( 550 V- inverter and doubled in impulse to 1000 V max)
Output Power	650 watts maximum
Output Frequency	(5-100) Hz in 1 Hz steps
Output duration	(30 microseconds -3,0 milliseconds)
Weight:	< 1,6 kg ( battery 7 Ah 2,5 kg)
Dimensions:	210x180x75 millimetres
Battery	12 V DC ( any model)
Battery life	7 Ah (2-3 hours of electrofishing) Larger battery-longer fishing.
Overload protection	("ATTENTION! OVERLOADING!" appears on display panel while working)
Polarity protection	No ("+" and "-" – battery connector different and marked)
Battery alarm	Mark "-" appears on display panel in the middle when it reaches 10,3 V

**STEERING PARAMETERS of SAMUS-725G**



Sockets "OUT ( see photo) serve to install a loading of electrofisher. The socket "+" is connected with cable on the landing net. The socket "-" is connected with outer cable with metal wire at the end (mass/minus) which is thrown into water behind the boat or fisherman.

Cables of 12 Volt power supply (feed) are connected to the battery "+" to "+" and "-" to "-". VERY IMPORTANT. DO NOT MIX THE POLARITY ( the device will be broken and it is necessary to replace the burnt transistors).

Socket "START" designed to connect a cable of steering by the means of which the electrofisher is turned ON and OFF. Red indicator shows the presence of high voltage on the outer sockets of the electrofisher.

By the means of 4-four buttons and display fisherman regulates and controls parameters of the electrofisher.

Buttons "FREQ ↑ ↓" serve to increase or decrease frequency of going out impulses in accordance with direction of the arrows.

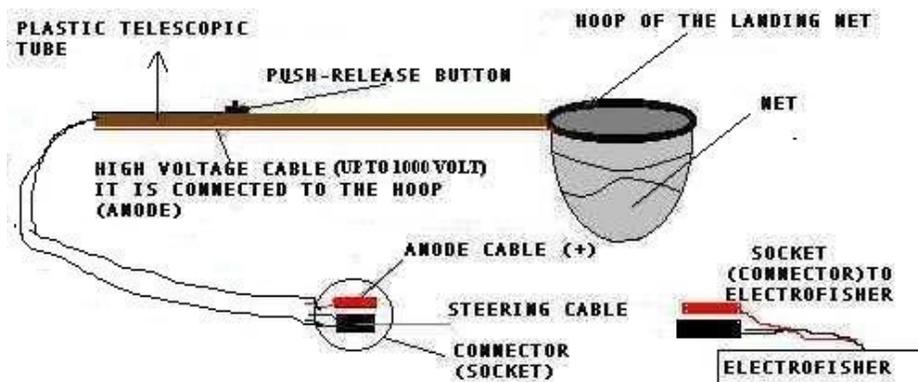
Buttons "DURATION ↑ ↓" serve to increase or decrease the length of impulses (duration) in accordance with direction of the arrows. As duration of impulses influences the output power the given buttons will determine the power going out into the water.

In the course of inserting the password these buttons have different functions- it will be explained further.

The button LGT/MOD serves two functions: short pressing on this button turns ON/OFF display : while longer pressing ( more than 3 seconds) makes we can see the general Ampere-hours and general operating time of electrofisher. To escape from this state we repeatedly have to press this button for more than 3 seconds.

Display serves to regulate and control the appropriate parameters and the work of electrofisher. The parameters will be described below.

## CONNECTING ELECTROFISHER SAMUS-725G



The electrofishing is quite simple, however, it may seem to be very complicated at the first sight.

The most important is to meet all cable connections and the electrofishing device. To connect correctly device we should install first the button of steering on landing net and to connect the high voltage cable into the landing net. The button is the common PRESS-RELEASE button this means that in moment of pressing device switches ON and makes possible fishing and in moment of releasing the button the electrofisher switches OFF.

This button we install on landing net - we attach it with isolation to landing net in distances 30-50 cm from end so that we could easily operate the landing net and switch on the electrofisher.

This button is connected with cables of steering output power- if we press the button then the device switches ON- we release the button then device switches OFF.

High-voltage cable - (up to 1000 Volt) we can install directly to the hoop and to wind its rest on stick or what more comfortable to place into the centre of plastic telescopic tube ( handle of landing net).

To the socket OUT “+” of electrofisher we connect outer cable which goes to the landing net. This must be installed on the plastic landing net and the bare end of a cable must be fixed to the metal (aluminium) ring of landing net. The other 2 cm bare end we place in the socket OUT”+”.

To the outer socket OUT “-“ we connect outer cable with metal wire at the end ( mass/minus) and the metal copper end place into the water in the back part of the boat or we throw it behind ourselves while electrofishing in brooks or streams.

To the socket START we insert the steering cable to the maximum end.

**ATTENTION! DO NOT MISTAKE WHILE CONNECTING 12 VOLT CABLES OF POWER SUPPLY TO THE BATTERY. IF IT HAPPENS THE DEVICE WILL BREAK AND IT WILL HAVE TO BE REPAIRED (REPLACEMENT OF TRANSISTORS).**

To avoid above-mentioned we recommend careful connecting one by one first “+” (plus) and then “-“ (minus). The power supply cable “+” is additionally marked with **RED BAND**. When you connect the second power supply cable you will see the sparks which should not frighten you as condensers are loading in the input area of electrofisher. Afterwards the display will turn ON and the name of our company will appear- SAMUS SPECIAL ELECTRONICS.

## ENTERING PASSWORD



**Window for password** When the electrofisher is power supplied it goes in the state of password insertion without which the fishing is not possible. It is necessary instead of zeroes to insert the 6 digit password. This is done by the means of up and down buttons “FREQ” from 0 to 9. Shifting to another digit goes with pressing the button “DURATION ↑ ”. The black point shows the appropriate order of another digit for 6-digit password. Passing goes from left to right in a cycle. Set the appropriate password of your electrofisher and next press button “DURATION ↓” to switch the device ON. If you did it wrong the device remains in the same state. After 10 incorrect insertions the electrofisher will block and to unlock it you need to switch off the device from power supply (12 Volt) and then to try again.

When done correctly the electrofisher will be opened and go into basic functions.

The given wording will appear on display : GOOD LUCK! for 5 seconds and in the meantime high-voltage condensers shall load and internal diagnosis takes place. Then the display will show the main panel with all the basic parameters.

F- frequency of going out impulses in Hz. This parameter may be regulated by up-down buttons “FREQ ↑ ↓” . When electrofisher is switched on frequency is set on optimum level 50 Hz and the duration on minimum. The range of regulation is 3-100 Hz.

L- duration ( length of impulses) of going out impulses are regulated by the means of buttons “DURATION ↑ ↓” The range of regulation 0,03-3,00

When electrofisher is switched on the frequency is set on optimum level (50 Hz) and the duration on minimum.

J - the consumed current by electrofisher ( Amperes) from battery . After the point we can see decimals of Ampere.

P - Power (watts). When the steering button is not pressed - off (START) the consumed power is in the idle mode. When the START is pressed (ON) the output power appears on the panel on the right side.

Digits separated by a blinking colon show the time of electrofishing. When the password is inserted the time is counting automatically and it is displayed on the panel at once. The given function is not marked by any sign and is recognised by the blinking colon.

H hours the number of consumed Ampere-hours during electrofishing. If the battery was full loaded and during electrofishing it was unloaded then we can see the real capacity of Ampere-hours, which a given battery has. After the point we can see decimals of Ampere-hours. In fact capacity showed is lower than on the battery as the power source is not always fully unloaded.

General operating time and Ampere-hours consumed by the electrofisher. When the power supply is turned off the indicator of Ampere-hours and time of electrofishing is resetable to zeroes. However, during operation time the data are saved and summed up in the memory. Looking at them is possible by pressing the button "LGT/MOD" for a few seconds. To zero the given counter is possible by pressing the button "FREQ" once.

If, on the display panel, the sign (-) appears in the middle this means that battery voltage decreased below permissible level ( 10,3 V). If it goes while the button START is pressed it is advised to lower the power of fishing in order to catch for some time yet. If the (-) is lighting constantly then you should stop electrofishing and change or charge the battery. The sign (+) at the right side of the counter of time shows that the battery is appropriately loaded and has enough capacity for electrofishing.

At the right of the sign (+) while the button START is pressed the small arrow "↓" appears which indicates the state of steering cable.

The electrofisher SAMUS-725G has an overload protection, which prevents the device from damages caused by high surges, that switches on when the power exceeds 650 watts. When it works the display shows ATTENTION! OVERLOADING! for 5 seconds.

As it is possible to overheat transistors then in such case the device automatically blocks itself for 5 seconds from further operating ( in case of pressing the button START) - that time is necessary to cool the transistors. In the moment of blocking all regulations keep going without influence on indication. After 5 second period the warning ATTENTION! OVERLOADING! disappears and the electrofisher is ready for electrofishing again.

## ELECTROFISHING WITH SAMUS-725G

When electrofisher is correctly connected we can start fishing dipping the landing net in water and pressing press-release button. The (-) minus cable with metal wire at the end must **ALSO** be dipped into the water. Fishing takes place by periodic/short pressing the button START on landing net while it is under water surface. The (-) minus cable with metal wire at the end and the cable (+) plus must be in the distance of 3 meters and in case of catfishing it can be greater even 20 meters. In this moment flow of electric current follows between electrodes and executes the fishing. You should hear silent noise and blinking red lamp on the device as well as display showing operating parameters- J (current), P (power), time.

In the course of electrofishing negative (-) electrode is placed in water "freely" and positive electrode (anode)(+) serves to active fishing. Intensity of current field is the greatest at positive electrode and quickly diminishes with the distance from it. In regard with this fishes become paralysed in the radius not greater than 2-5 metres from anode. Inertly flowing fishes we should pick up quickly because in the course of several seconds they recover equilibrium and escape at random.

When we catch wading in a river cathode cable we pull near behind so that space out between electrodes must be not greater than 2-3 metres.

You should be interested in two parameters at the first try- J or P. For instance J should be regulated by increasing duration (L) of going out impulses until the consumed current will reach 6-20 Ampere. Approximately, it will be your nominal POWER for electrofishing and fishes should be caught in that power range accordingly.

Switching the device by pressing START should be no longer than for 10 seconds. If the consumed current is lower than 10 A you can hold on the START button longer and in case of 5 A you can keep it very long.

It is not advised to turn the electrofisher very often as fishes are shy, especially large, and will escape from big distance if they are outside of the catching zone. You should turn the device every 5-10 meters from last fishing place. Boating should be silent and careful in order not to frighten fish.

Fishermen should also watch out not to close cathode and anode and simultaneously to switch on the device because it may cause its overload and damage, but it should not happen in most cases as the electrofisher has built-in protection from overloads and display will show ATTENTION! OVERLOADING!

## REGULATION OF PARAMETERS OF ELECTROFISHER SAMUS-725G

In the previous paragraph you set the optimum parameters, however, in most cases depending on special water conditions, weather, season of the year, conductivity of water it is necessary to correct these parameters to obtain higher efficiency and better effects. Each species of fish has its own properties and each species differently behave in the electric field.

Basic parameter which influences on smooth exit of fish from water is F- frequency. Low frequency (45-50 Hz) makes fish exit to the surface quick and from greater distance. . On the contrary, higher frequency causes smoother exit of fish on the surface. Taking into consideration this you should remember : increasing of frequency -slows down move of the fish, while decreasing of frequency speeds up. In the summer fish is very quick and frequency should be increased. In cool seasons fish is more lazy and frequency should be decreased. In the course of electrofishing in thick water flora it is advised to lower the frequency in order to enable the fish to overcome all barriers on its way towards the landing net.

Usually, frequency is set once and in the course of gaining experience and tries fisherman can adjust this value in desired direction. Then parameters will be corrected according to changes of water properties and other factors which influence electrofishing.

You should also know a fact that changes in frequency make change in level of output power of electrofisher. Therefore, if you want keep the previous power level you should appropriately correct the duration of impulses increasing their length. This is done by the means of buttons "DURATION".

"DURATION" (power) of output impulses influences exit of fish in lesser level than frequency. If the power is high the fish will start flowing up from deeper water and sinking afterwards. Too little power level will cause that fish will escape immediately if the electric field is not enough to shock them and if you press the button START for too short time. Between maximum and minimum there is an optimum level of power which allows, from the point of view of smooth exit of fish, to catch them as effectively as possible. However, this level should be closer to minimum than maximum to keep the battery work longer and cause less stress to fish.

During electrofishing it is possible to take two ways of fixing output power: medium power level ( $J > 10$  A) and periodic pressing the button START (no longer than 10 seconds); low power level ( $J < 10$  A) and longer pressing the button START.

In the shallow waters the power can easily be reduced to as low as 50 watts ( $J = 5$ ).

## CATFISHING WITH SAMUS-725G

The given model of electrofisher SAMUS-725G has an option for catching catfish especially designed for that species. This makes electrofishing catfish from large distance ( up to 30 meters) and deep water - more than 10 meters. Catfish electrofishing is being effected on very low frequency ( $F < 20$ ). The electrofisher automatically goes in the state of catfish option if the frequency is lower than 20 Hz. Due to that fact steering of electrofisher changes and optimum frequency sets between 10 and 15 Hz and output power levels between 40 and 70 watts.

In this option the device is switched ON for long minutes by single press of the button START the same refers to switching OFF- one single press is enough. If you forget to switch OFF the electrofisher while lifting the landing net over the surface of the water it will automatically switch OFF itself. Catfishing by the means of SAMUS-725G may take place in large aquatic environments and enables skillful fisherman to catch large quantities of catfish for commercial aims. It is advised to boat in the water where the big water holes are present and switching electrofisher for up to 10 minutes observing flowing up catfish in the distance of 15-20 meters.

After 3-4 fishing you will become experienced operators of that device. Try to find the best parameters for your waters as water properties differ in various regions.

Do not forget about observing power levels not to exceed 300-350 watts. High power level may only cause quick unloading even the high capacity battery. In electrofisher high power is required for ensuring high reliability only, in order to have greater reserve.

Great role in electrofishing plays knowledge of a given water area, places of fish stocking and fish customs.

## SAFETY ISSUES

SAMUS-725G is an absolutely safe and reliable electrofishing device if appropriate electric safety issues are known for a user.

It is forbidden to switch the device and electrofish in the close exposure to bathing people or drinking farm animals.

In no case it is allowed to electrofish with the device into which the water got in.

In order to avoid this we advice you to keep the machine in dry place on the boat.

If that happens fishing must be postponed until the device will be dried. To do it you should unscrew 4 bolts and leave it opened in dry place for at least 6 hours.

Do it carefully as some condensers inside may keep high voltage for some time.

After fishing during rainy weather it is recommended to open the device and dry it for some time as well. Place it in a safe inaccessible place for children or other people. Keep the electrofisher in dry and warm place after each use.

Remember that radiator at the back of electrofisher is connected inside with (+) plus socket of radiator, therefore, do not let the radiator to have contact with minus (-) bolt of the battery. Do not place electrofisher on the bolts of battery and avoid contact of radiator with the battery bolts (+ and -).

The electrofisher should be separated from battery (the best in the waterproof bag with two separate spaces) and only two isolated cables (+ and -) should connect 12 Volt battery and electrofisher. Do not put the electrofisher on metal bottom of the boat.

Do not use metal paddles while boating on the water to avoid unpleasant influence of electric field on your body or electric shock..

**ATTENTION! The electrofisher may get damaged at once in case of:**

- **Incorrectly connected 12 Volt power supply cables (+) and (-) (incorrect polarity)**
- **Electrofishing while the water got into the inside of the device**
- **Checking the performance of the electrofisher connecting outer anodes on so called “sparks” (touching anode to the cathode)**

The performance of electrofisher can be also checked in home conditions. To do so you need at least 230 Volt lamp of 250 - 500 watts of power. In no case the lower power lamp should be applied. It is advised to check the performance in home conditions by dipping the anodes in home water in a large plastic bow (or bag) in order to create artificial conditions of water basin. In such case you should remember about separating in such a small space anodes (+) and (-) not to cause contact between them- this may result in high surcharge.

It is forbidden to connect electrofisher to other unstable sources of power supply than 12 Volt battery (car accumulator).

Do not use maximum effort while pressing buttons or connecting cables to sockets.

Watch integrity of isolation of wires of loading and a power supply. In case of infringement of a wire it is necessary to replace on similar on section with that that were complete with the device.

Periodically check reliability of contact of cable with anode (landing net) as well as power supply cables with battery bolts.

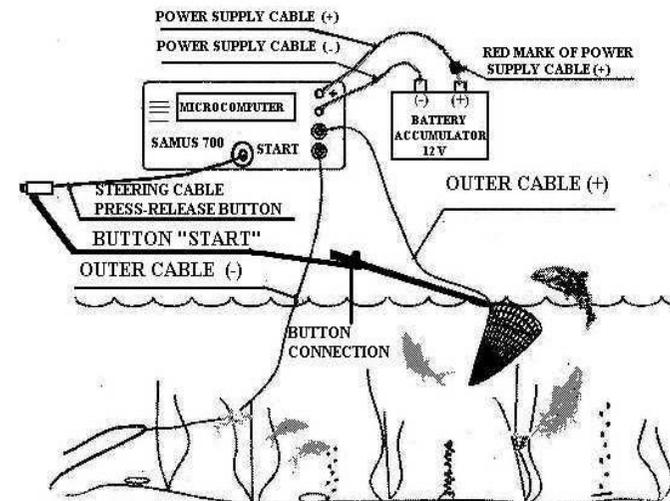
Watch integrity of rubber band on micro-switcher of the steering cable and in case of damage change by the home means such as : finger of rubber glove or in the end condom.

On the contacts of the micro-switcher is present voltage of only 5 Volt at the current of a few milliamperes. Therefore, this cable can be easily replaced by another having provided only necessary mechanical durability.

**Possible problems:**

While connecting cables to power supply 12 Volt display does not switch on	No contact of power supply cables with the battery (accumulator) Incorrect polarity (-) changed with (+)-the device is broken
While pressing START button there is no voice of working device Red indicator flickers	There is no loading of device ( anodes are not dipped in the water) metal wire out of water No contact in outer cables, no (+) plus cable contact with ring of the landing net
While switching ON the electrofisher the overloading protection is still working	Water in you area very conductive ( low resistance, salty or highly dirty water) Electrofishing with our device is not possible

We guarantee free reparation or replacement of the broken device. Our guarantee certificates are not distributed to devices with obvious or unauthorised mechanical damages and incorrect polarity connections as well as for devices into which the water got inside.



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