

Multi PLUS electronic scale inhibitor

Dear Customer,
Thank you for purchasing this product. Prior to using this device, it is recommended that you carefully read the Instructions for Use.

Warning!! Important safety information!!

- No liquids of any kind must be allowed to penetrate this device.
- The device must never be operated under adverse environmental conditions. Adverse environmental conditions include: ambient temperatures above 50° C, flammable gases, solvents, vapours, dust, relative humidity above 80 %.
- The device may only be operated in dry and enclosed areas.
- If it can be assumed that a safe operation is no longer possible, then the device must be stopped and switched off immediately, and preventive measures against an unintentional operation must be taken. A safe operation of the device can no longer be assumed if the device no longer provides any indication of functionality, if it shows visible signs of damage, if the electricity supply cable is damaged, in the event of transportation damage, or after the device has been stored under harmful conditions.
- Maintenance and repairs – maintenance and repair services may only be performed by authorized experts. Only certified spare parts may be used as replacements.

Intended use

Limescale in hard water results in a shorter life span of appliances such as dishwashers, washing machines and showers, whilst heating elements, showerheads, pipe work, valves, etc. easily become choked with scale causing poor heating efficiency and waterflow. This electronic scale inhibitor is intended for dissolving and preventing lime scale deposits in such water pipe systems.

Description

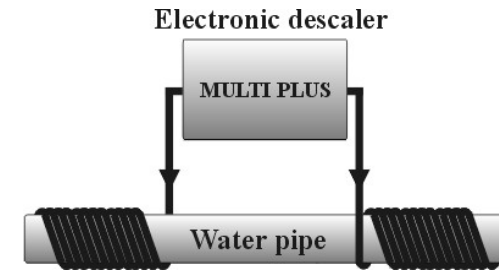
This device is intended for use in medium or large households, block of flats, commercial establishments with a pipe diameter of max. 5/4" (5/4 inch = approx. 32 mm) for water consumption of up to 5 m³/h.

The Multi PLUS scale inhibitor transmits low frequency radio signals which are periodically changed by the built-in program of a microcontroller. These signals are transmitted to the water pipe via two aerial wires (coils) wrapped around the cold water pipe near the rising (incoming) main. All copper, plastic and iron pipes are suitable for the installation, except lead. This process does not affect the water quality. No intervention into the water pipework is necessary since the electromagnetic waves work through the wall of the pipe. The transmitted signals destabilise Calcium-Carbonate (CaCO₃) ions (limescale) forcing them to take up a new crystal structure. This mineral then loses its bonding characteristics so its tendency to get stuck to any surface is dramatically reduced. Already existing scale deposits are slowly being dissolved and flushed away. This change in structure lasts for a few days only. For applications where water has been treated yet remains static for more than 2-3 days (eg. garden pool), this method of descaling is not the best possible option. This is not only ecologically beneficial but also environmentally friendly as no chemical substances of any kind are being used. The professional electronic descaler is appropriate for all degrees of water hardness and can be adjusted individually. As a result of lime-free heating systems, you will also be able to reduce the energy requirements and the amount of detergents and dishwashing agents used.

Installation

The descaler unit is normally fitted at a point shortly after the cold water rising main enters the property. If the water system utilizes a large water storage tank that supplies all systems by gravity, the scale inhibitor is better installed on the water exit side of the tank. The installation should be made on a section of free pipe with a length of at least 25 cm, without sleeves etc. Please make sure that there is a 230 Vac power outlet nearby. If there is a built-in filter, then the installation should be made ahead of the filter. **Warning!!** Be sure to disconnect the mains power plug prior to opening the device. If in doubt, please consult an expert. Mount the control box to a surface that does not expose the unit to excessive moisture. Unscrew the four screws on the top of the device and remove the lid. You can drive the screws through the rear side of the box for the wall mounting. Please close the device again after it has been mounted to the wall. Now, detach the protruding red-black wire from each other and wind each separately (one coil black wire – another coil red wire) onto the water pipe. The two wires must be wrapped tightly around the pipe, direction of the wind should be carefully observed (see figure). **Important notice!!** Make sure that the winding direction of the two wires are as shown in the figure; otherwise, the effectiveness of the device might be impaired. The distance between the coils is normally the length of the descaler housing itself (~15 cm), if you have lack of space you can bring the coils closer to each other but keep a min. of 5 cm between them. Secure the ends of the coils with cable ties, adhesive tape or hot glue to ensure they do not become unwound.

Warning!! When winding wire around metal pipes, make sure that the bare wire ends can not get in electrical contact with the metal pipe. If this should happen, the "Error" LED will be illuminated when the device is started up.



Startup

After the lid of the device has been closed again and the coils are set, insert the plug into the mains power socket. Following the connection to the 230 V outlet, an automatic test program will run. First, all LEDs except the "FEHLER" (Fault) LED will light up. Approximately 2 seconds later, the LEDs will go off in the following order: "AUTOMATIK" (Automatic), "ROHRPFLEGE" (Pipe care), 5 kHz, 3 kHz and the "1 kHz" LED remains on and will start flashing. The startup test is now finished. The green "NETZ" (Power) LED is illuminated continually.

Modes of operation

When the startup test is finished, the device will go into the 1 kHz mode. By pushing the "MODE" button, the device will switch to the 3 kHz mode, by pushing the button again to the 5 kHz mode. In this mode of operation, the corresponding frequency that has been selected will be active.

Pipe care (Rohrpflge)

Switch the device to the 5 kHz mode. Now push the Mode button for approximately 2 seconds. The device now changes to the Pipe Care mode. The yellow "ROHRPFLEGE" LED will go on and the 1 kHz, 3 kHz and 5 kHz LED's are illuminated alternately. In this mode of operation, the frequency sweeps constantly between 0 and 5 kHz.

Automatic (Automatik)

As the hardness of the water supplied by the waterworks company keeps changing, the selection of the most suitable frequency is only possible by varying the frequency periodically. On the long run this helps the descaler unit work at the highest efficiency possible. Irrespective of the mode of operation the device is in, push the Mode button until the "AUTOMATIK" LED lights up. In this mode, the following program will be started:

- 2 hours of pipe care
- 5 days of 1 kHz mode
- 2 hours of pipe care
- 5 days of 3 kHz mode
- 2 hours of pipe care
- 5 days of 5 kHz mode

After the program has been completed, the cycle will start again from the beginning.

Frequency multiplier selector switch

By taking off the lid of the unit you can access the black selector switch mounted on the printed circuit board. It has two positions marked as „NORMAL" and „ROHRSANIERUNG", by default the „NORMAL" position is selected. In case the waterflow, pipe diameter or existing scale deposits are higher than average, select the „ROHRSANIERUNG" mode which multiplies the frequency by 5, rendering therefore a frequency output of 5 kHz instead of 1 kHz, 15 kHz instead of 3 kHz and 25 kHz instead of 5 kHz. In „ROHRSANIERUNG" mode individual frequencies or modes (such as Automatik or Rohrpflge) can still be selected, the difference is that the outputted frequency will be five-times higher than the selected one.

Fault - If the "Fault" LED is illuminated, a short-circuit in the coil is likely. The most frequent causes for this fault are damaged coils or contact of the coil end with the metal pipe.

Important notice!! The optimal effectiveness of the device is achieved in the "Automatic" mode since all programs run consecutively. If your pipe systems have already become severely calcified, we recommend to operate the device in the Pipe Care mode for approximately 4 weeks in order to dissolve the lime deposits more quickly. Subsequently, set the device to the Automatic mode. Clean the shower heads and aerators in faucets more frequently in the beginning, since dissolved lime scale particles can impede the flow of water. Your Multi PLUS scale inhibitor device does not require maintenance.

Technical specifications

Operating voltage: 230 Vac, Power consumption: 1.2 W, Dimensions: 160 x 120 x 78 mm, Weight: 505 g.