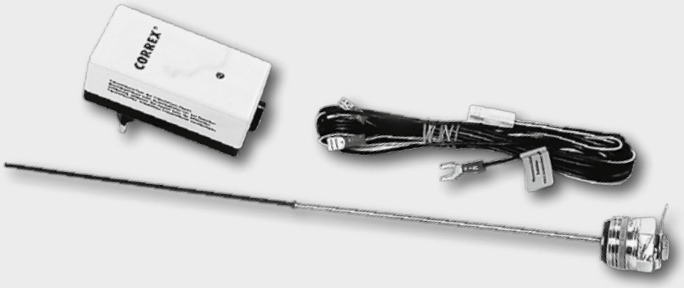
TANK ACCESSORIES

S1 IMPRESSED CURRENT ANODE



Impressed current anode

Unless preventive measures are taken, the constant introduction of oxygen-rich fresh water into your hot water tank inevitably causes the tank to corrode.
Traditionally, two types of protective measures are used. The first is an inner coating, but that means that extremely small areas will be unprotected. The second is the use of a magnesium anode, which produces a complementary protective current. But the anode "sacrifices" itself over time. When it is used up, there is no protective current for the tank – and corrosion sets in.

An impressed current anode is a long-term alternative to a sacrificial anode. It is based on the most advanced technology and provides a lasting, electronically controlled protective current for your tank. The continuous protective current is controlled by a potentiostat and is supplied by a titanium electrode in the tank. This provides safe protection against corrosion in all TiSUN® enamelled steel tanks.

An effective protective current must be adjusted exactly to the individual conditions in the hot water tank at all times. To prevent it from being too high or too low, the potentiostat automatically adjusts the current based on the individual operating conditions. Over- or under-protection is prevented in this manner. The current is fed via a mixed oxide coated titanium electrode, which is practically wear-free.

Measurement and feeding procedures take place alternately within millisecond intervals:

1. Measurement of the actual potential in the tank
2. Calculation of the current required to reach the target potential
3. Feeding the protective current
4. Achieving the target potential

Corrosion can therefore not commence.

The impressed current anode is supplied with all components required for installation. The potentiostat and electrode are easily connected to one another using a connecting cable. The accessories supplied allow very quick push-fit assembly.

Specifications

Type	FA-S1
Item no.	**1610064**
Use	For enamelled tanks up to 1,000 l
Potentiostat – type	UP 19
Version	Plug-in potentiostat
Mains voltage	230 V
Frequency	50/60 Hz
Nominal current	100 mA
Acceptable ambient temperature	0–40 °C
Protection class	IP II
Connection	Male thread G ¾"

General information

The assembly specifications are non-binding guideline values that only serve for orientation and assume that the tanks are manufactured according to DIN 4753. It is especially important to meet the specifications prescribed for the quality of the enamel (standard protective current requirement). Tanks have to be made of non-rusting steel containing a minimum of 16% chromium. Any additional metallic components installed in the tanks (heat exchangers, electric heating elements, etc.) have to be insulated and equipped with an electrical potential balancing resistor if necessary. If several anodes are installed, they must be evenly distributed within the tank. The tank height/width ratio may not exceed 3:1. Binding approval of any additional installations requires prior laboratory tank measurements by Norsk Hydro.

Troubleshooting

The troubleshooting procedures described below may only be carried out by the installer or a qualified service technician!

If neither of the indicator lights is lit, there is probably no mains voltage.

- Is the tank water heater filled with water? Fill the tank water heater with water.
- Are you sure that the flow of electricity in the circuit is uninterrupted? Check all connections and switches to be sure that they are making proper metallic, electrical-conducting contact and rectify the fault.
- Is the polarity correct? Test the voltage – connect a digital multimetre with the anode (positive pole) and tank (negative pole). It has to show a positive value.
- Is a magnesium anode still installed in the tank water heater? Remove the magnesium anode.
- Is the electrode completely insulated from the tank wall and components installed in the tank? When the tank is empty, use a tester to check the insulation. If necessary, correct the position of the components and/or the electrode.
- Are the seals wet? Remove the anode, dry all parts and reinstall. Make sure that the installation is insulated.
- Have any non-enamelled heat exchangers (e.g. Cu finned tubes, Cu smooth pipes or CrNi smooth pipes) been installed so that they are completely electrically insulated against the tank water heater? Check the insulation with a tester and rectify any fault.
- Is the plug-in potentiostat overloaded? Inspect the container for visible enamelling faults.

If the impressed current anode fault cannot be corrected with these procedures, please contact our customer service department. The fact that the LEDs are lit green does not necessarily mean that the tank is protected. This only shows that the protective current is present. The size of the anode must be appropriate for the tank in order for the anode to offer sufficient cathodic protection.