



Assembly and Installation Instructions

Electric Heat Exchanger of the Series

X-EWT 2.0 18-24-30-36-45-54-60-72

If you do not pay proper attention to these installation instructions the manufacturer cannot accept liability for any resulting damage to the device itself, the environment, property, or personal injury.

Your safety is our concern!

These Electric Heat Exchangers consist of a non-flammable plastic casing and three already mounted electric heating elements in Incoloy 825.

1. Purpose:

These Electric Heat Exchangers are made for the sole purpose to heat up bathing water in swimming pools and whirlpools. Do only operate them with a running pump! It is not permitted to change and/or modify the device without consulting the manufacturer.

2. Safety Warning:

- 2.1 This device has not been designed for use by individuals (including children) with physical, mental or sensory disabilities, or people who lack the necessary experience and/or knowledge unless under the supervision of someone entrusted with their safety or instructed by that person in how the device should be used.
- 2.2 **Attention:** never open the control box without disconnecting it carefully from the electrical power supply and to be secured against unintentional switching on.

3. Important:

- 3.1 Anybody involved with the installation, start-up, use, maintenance, and/or repair of the Electric Heat Exchanger must be qualified and carefully follow the instructions.
- 3.2 Only a specialized electrical technician (VDE 0105) may operate the device following the DIN VDE 0100 safety standards.
- 3.3 A FI – safety switch 0,03 A and a circuit breaker need to be installed into the power supply.
Attention: These safety devices are not included in the controllers of the electric heater X-EWT 2.0! In case of a short to ground or a short circuit, the filter pump needs to switch off automatically. The device must be taken off the power supply immediately and the water flow needs to be redirected through a bypass. To avoid further damage and not to risk destruction of the device, absolutely no water pressure and no water flow is allowed! Only once the water runs through the bypass, the filter pump can be switched on again and an eventual repair of the electric heat exchanger X-EWT 2.0 can be planned (see point 18, troubleshooting chart).

4. Fire Hazard:

- 4.1 It is forbidden to install the device near flammable materials.
- 4.2 Do not use covers or insulation.

5. Safety Devices:

- 5.1 This Electric Heat Exchanger is protected by seven safety switches:
 - a) electric temperature regulator 1-40°C
 - b) three times with a safety thermostat 55°C, with a reset button on the outside
 - c) pressure switch
 - d) flow switch
 - e) overheating protection for the electric box

Do not operate the device through the flow switch but through the filter pump. See 11.6 and the circuit layout!

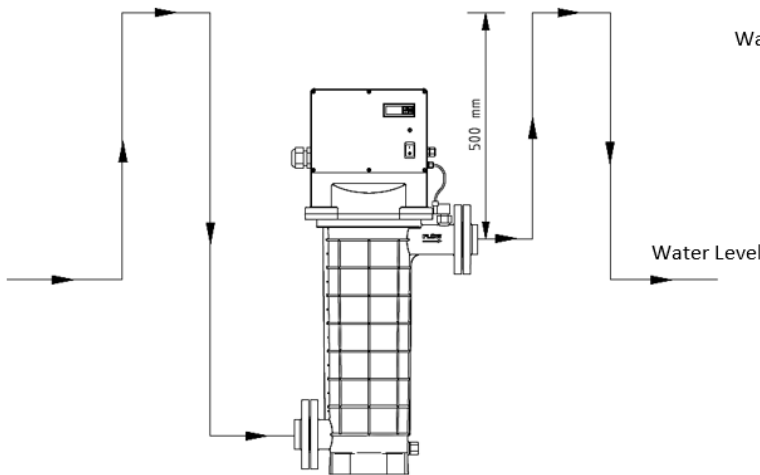
- 5.2 If there is lack of water or overheating, the safety devices will switch the heat exchanger off.

6. Corrosion Prevention:

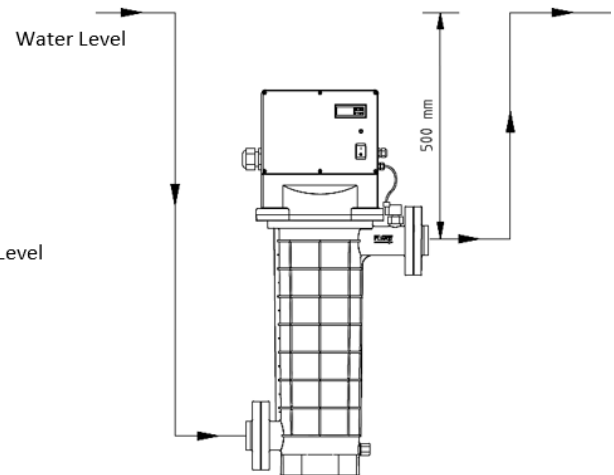
- 6.1 The electric heat exchanger must be installed after the filter.
- 6.2 Be careful not to wash any metals into the Electric Heat Exchanger when connecting it to the water circuit. Before activation the water pipes need to be full and without air.
- 6.3 The electric heat exchanger must be mounted in a way which allows the device to be always full of water. During off season the heat exchanger can also be completely drained.
- 6.4 To avoid corrosion do not exceed the following water parameters.
 - chlorine content: max. 500 mg/l
 - free chlorine: max. 1 mg/l
 - PH: max. 6,8 – 7,8

Attention: Disinfection devices should be installed after the electric heat exchanger and in a way which prevents chemicals or gases to enter while it is switched off.

Installation above water level



Installation below water level



7. Frost:

During frost the Electric Heat Exchanger has to be completely empty.

8. Please Note:

The specific water resistance at 15°C may not be below 550 kg OHM x cm. When the limits are properly taken into consideration (see above), the water resistance will remain between 1,5 Mega OHM x cm and 550 Kilo OHM x cm.

9. Operating Pressure:

Do not exceed the 3 bar operating pressure, otherwise the electric heat exchanger could start leaking.

10. Minimal Quantity of flow and minimal pressure in the casing:

9000 l/h / 0,05 bar for model X-EWT 2.0 18 / X-EWT 2.0 24 / X-EWT 2.0 30 / X-EWT 2.0 36

10000 l/h / 0,05 bar for model X-EWT 2.0 45

11000 l/h / 0,05 bar for model X-EWT 2.0 54

12000 l/h / 0,05 bar for model X-EWT 2.0 60 / X-EWT 2.0 72

11. Safety Instructions:

- 11.1 Before starting the Electric Heat Exchanger install an FI – safety switch (0,03 A) and a circuit breaker into the power supply.
- 11.2 The Electric Heat Exchanger must be connected to the ground wire
- 11.3 The device must be connected to permanently installed pipes.
- 11.4 For the electric connection it is necessary to use a H07 RNF cable.
- 11.5 While cross sectioning the cable, please consider VDE 0100.
- 11.6 It is imperative that the controller of the Electric Heat Exchanger had to be locked electrically through the filter pump (see 13)

12. Mode of Operation:

If the device was connected by following the circuit diagram, with pump lock, the following lock mode of operation can be expected:

12.1 Start-Up:

Step 1: put the operating switch on position „I“

Step 2: Start-up the filter pump and set the electric temperature control to the desired water temperature (e.g., 25°C).

In point 15 you can find the necessary reference for the set up you can find in point 15.

12.2 As soon as the filter pump starts working, the lock and the flow switch will react. The display will be activated; the red control lamp will switch on. With the default setting the heating elements will be switched onto the circuit after a five-minute delay. Now the green control lamp switches on, too.

12.3 As soon as the desired water temperature is reached, the heating elements will be switched off by the temperature control. The green light switches off. The display shows the set temperature. The red light will be on as long as there is no disturbance. All active lights and the display will switch off with the filter pump.

12.4 If the display switches off while the filter pump is running, there is not enough water flowing through the device. Another reason could be that overheating took place and the safety thermostats switched off the device.

12.5 Set the operating switch and the circuit breaker to „0“ and find out why the overheating took place.

12.6 **Attention:** Never open the electric box without totally disconnecting the electric heat exchanger from the circuit.

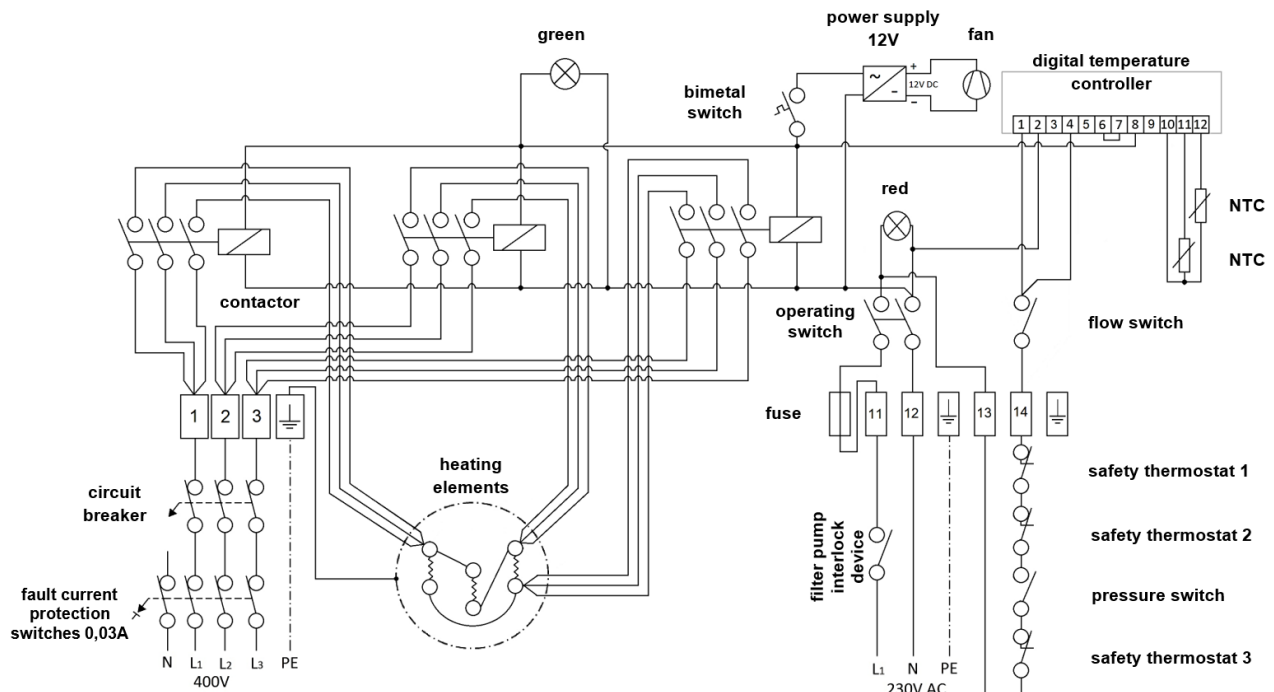
Make sure it won't turn on unintentionally. If necessary to switch on the device again, don't forget to push the reset – buttons of the safety-thermostats. You can find them under the removable black cover on the electric box (left side).

12.7 The start delay is active after each new start-up. This feature is preventing the controllers from hammering in the limit range and is therefore preventing damage. It is factory set at 5 minutes.

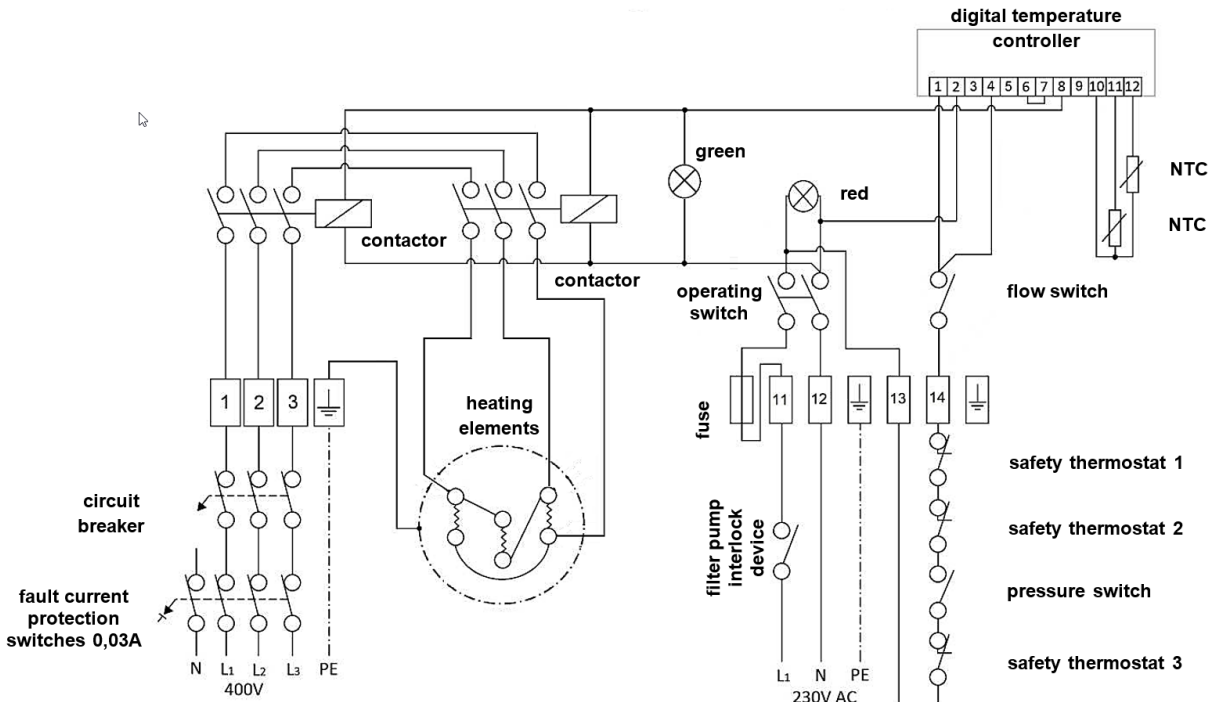
12.8 **Summary: During the filtration time the red control lamp and the display have to be on. If that is not the case a disturbance is going on! The bathing water temperature is shown on the display.**

13. Circuit Diagram:

13.1 Modell: 30 / 36 / 45 / 54 / 60 / 72 kW



13.2 Modell: 18 / 24 kW



14. Instruction for the Digital Electric Temperature Regulator Ascon Z31Y:

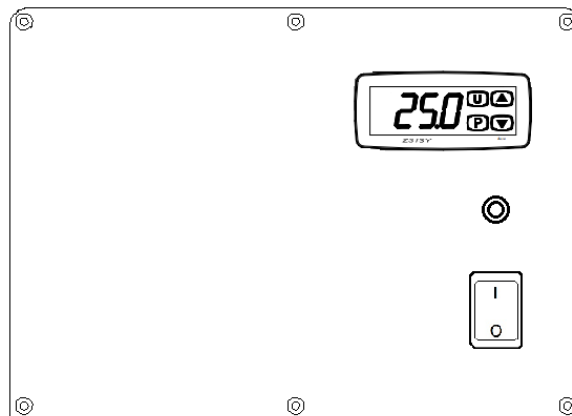
- 14.1 Contacts 1+2 supply 230V AC 50/60 Hertz
- 14.2 Contacts 10+11 Temperature sensor
- 14.3 Contacts 10+12 Temperature sensor for the electric box
- 14.4 After turning on the device a short test run will be shown on the display. After the filter pump switched on the bathing water temperature will be shown.

15. Setting of the desired bathing water temperature:

- 15.1 Briefly press the button „P“. The display will show alternately “SP” and the set point for the bathing water temperature.
- 15.2 By pressing the up or down arrow buttons (▲ or ▼) the set point (bathing water temperature) can be changed. The minimum temperature in 1°C and the maximum 40°C.
- 15.3 To confirm press „P“ or the selected number will be saved automatically after 15 seconds.

16. Setting the Differential Temperature:

- 16.1 The difference is factory set at 0,5°C. When the bathing water has reached the set temperature, the heating will switch off until the bathing water temperature has cooled down 0,5°C.
- 16.2 This differential value can be changed. By keeping the button „P“ pressed you will get to the menu . „r.d“ will appear. Press „P“ again shortly and the set value appears which can now be changed with the arrow buttons. The range is from 0,1°C to 30°C and can be adjusted in 0,1°C increments. Confirm by pressing „P“ again.
- 16.3 Exiting the menu will happen automatically after 30 seconds.

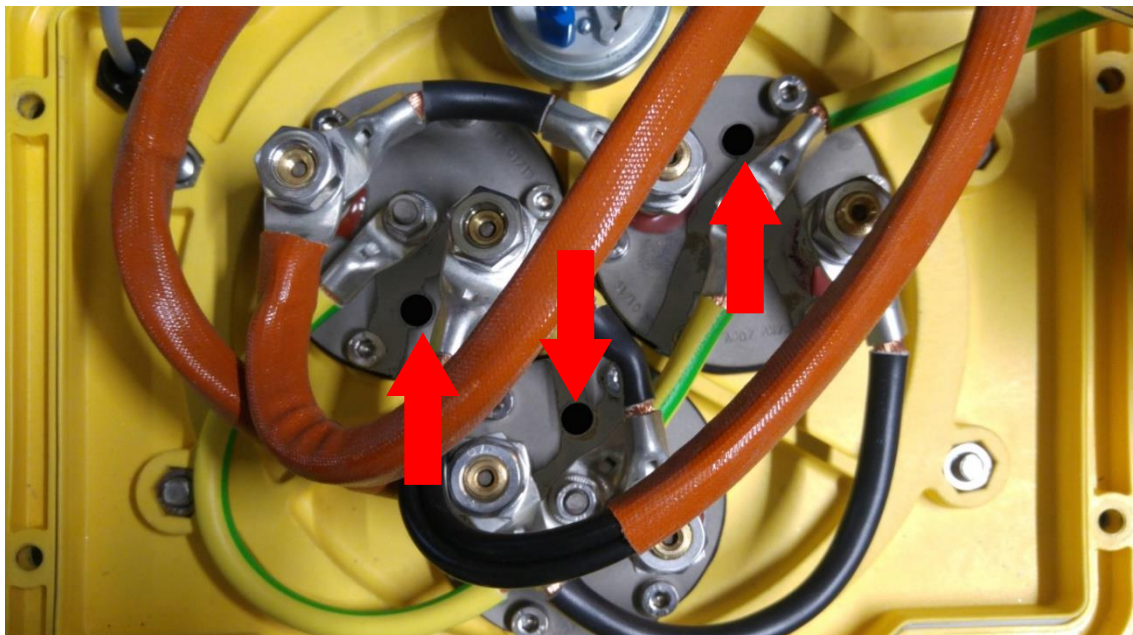


17. Changing the Heating Elements:

17.1 Please pay attention when you loosen or tighten the wire connections on the heating element. The lower nut needs to be blocked with a second wrench in order to prevent damages on the connections of the heating elements.



17.2 Please keep in mind the correct positioning of the heating elements which can be located looking at the positioning of the thermowells.





18. Troubleshooting Chart:

Problem	Possible Causes	Solutions/Helpful Hints
Display is not illuminated Red lamp on the on/off switch is on	Low/no water flow	Check the minimum water flow
	One or more safety thermostats are switched off	Reset the three safety thermostats
Red lamp on the on/off switch is not lit even though there is power available in the control circuit	Defective fuse	Check if the fuse is blown
	Defective on/off switch	Check if the device still works; maybe the switch must be changed
Device doesn't switch on	The start delay was not taken into consideration	<u>Attention:</u> as long as the red dot on the lower left of the display is blinking, the device won't switch on because it has a 5 min. start delay
	The temperature is set incorrectly	Check the temperature setting "SP". It must be set higher than the bathing water temperature
Device is not heating even though the controller works normally	Circuit breaker or FI-safety switch is interrupted	Activate both circuit breakers
Green LED-lamp is not illuminated even though the device should be heating	Defective LED-lamp	Check if the device is working anyway. If the device is working, change the LED-lamp
The device stops heating in the middle of the cycle but after a while it switches on automatically	The temperature in the controller is too high	Check the temperature in the controller: when pressing "U" the temperature inside the controller will be shown <u>Attention:</u> at 56°C the device switches off automatically and stays off until it cooled down to 48°C Clean the 2 filters of the ventilation system
	Fan or power supply 12V are broken *	Change the fan or the power supply 12V *
FI-safety switch or circuit breaker switched off	Heating elements are broken	Call a certified electrician
	Control-device is broken	

* for models X-EWT 2.0 30 / 36 / 45 / 54 / 60 / 72

19. Important general note:

Please save these Installation and Assembly Instructions and file them for later use. Thank you!

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technical changes reserved