

SWX EX12, SWX EX22



IMPORTANT: Read also through the separate instructions for the fan motor, motor protection and junction box before installing and using this products.

SWX EX are hot water fan heaters for hazardous areas.

SWX EX has been developed specifically for heating the air in environments with occasional danger of explosion (Zone 1 and Zone 2). The fan heater is available in two sizes: SWX EX12 and SWX EX22. Uses hot water as the energy medium.

- Approved for use in areas where the danger of explosion is due to gases or fumes (equipment category 2G).
- Temperature class T4 (max. 135 °C).
- Max. ambient temperature 40 °C.
- Protection class fan motor, IP44
- Stainless sheet metal casing, EN 1.4016.
- Water coil featuring copper pipes and aluminium fins.
- Quick release inspection and cleaning hatch.
- Supplied with an Ex classified fan motor and junction box.
- Components for room temperature regulation are not included.
- See appendix A for technical data on the fan heaters.
- Motor protector type U-EK230E is included and must be connected to the fan motor PTC thermistors, see page 5 and appendix C.
- Accessories:
 - Plastic motor protector casing, protection class IP54

Approvals

Frico's SWX EX fan heater meets the requirements of ATEX directive 2014/34/EU. Tests and certifications of SWX EX have been performed by DNV Nemko Presafe AS (notified body number: 2460) according to certificate Presafe 15ATEX 7676X. CE-marked.



II 2 G c Ex e IIB T4 Gb

General

1. All work is to be done by qualified and authorised personnel.
2. Handle the equipment carefully.
3. The heater is to be stored in dry conditions prior to installation and must not be exposed to extreme heat or cold.
4. The ambient temperature for the heater when in use is -20 °C min....+40 °C max.
5. **Caution! Maximum temperature for inlet water is +125°C.**
6. Before installing the unit, a visual check for transportation damage must be made.
7. The heater must be mounted securely to the wall.
8. **Caution! During operation the surface of the unit can be hot!**
9. Keep the areas around the air inlet and air outlet free from possible obstruction.
10. If any changes are made to the product without the consent of Frico, all the certificates of approval becomes invalid.

Applications

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved, Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.

CAUTION – Some parts of this product can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present.

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Fitting of the wall bracket

1. Remove the eight screws indicated by the arrows in photo 1.
2. Install the brackets with the cable attachment holes toward the fan motor connection cable, as shown in photo 2.
Use Loctite 2400 or similar to lock the screws.



Photo 1

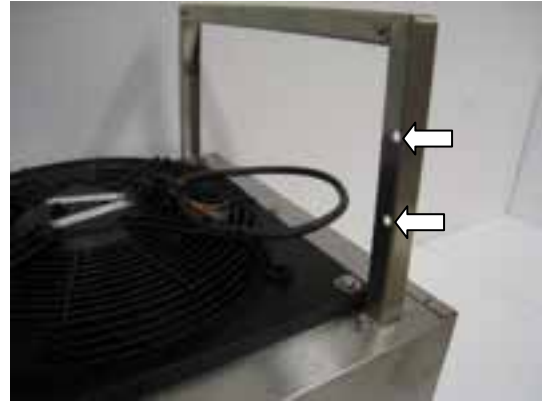


Photo 2

3. The fan heater may be mounted with the pipes facing left or right, as seen from the front, as shown in photo 3 and 4. In rooms with high ceilings, the fan heater should be installed in a low position, but not so low that it intrudes on the working space. For a fan heater wall bracket hole drilling template with the min. distances from the wall or ceiling, see appendix B.



Photo 3



Photo 4

4. The fan heaters are delivered with the air deflector fitted for mounting as in photo 3. If the fan heater is mounted with the pipes facing right, the air deflector must be turned for the air to be deflected downward. Remove the six screws (1/4" hex head) attaching the air deflector as shown in photo 5, lift out the air deflector and turn it 180°. Then reattach it.



Photo 5

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Water connections for the SWX EX



ATTENTION! Carefully inspect the whole system for leaks after connecting the water pipes.
A leak may cause damage that is expensive to repair.

1. The fan heater **must not** be connected to **hot mains water** or **steam**. The highest temperature and pressure allowed is indicated on the identification plate, next to the connection pipes.
Caution! Maximum temperature for inlet water is +125°C.
2. The capacity, water temperature, flow and pressure drop are shown in the tables for each heater size, see appendix A.
3. The fan heater must be connected so that the coil may be drained during a shut-down, in the event of freezing temperatures.
4. An air purge valve must be installed at the heater outlet pipe or centrally in the system.
5. The piping connected to the heater must be suspended in such a way that it does not put any strain on the inlet or outlet pipes.
6. Connect the water supply pipe to the lower pipe on the heater and connect the outlet pipe to the upper pipe, as shown by the arrows in photo 6. The connection diameter is 22 mm on SWX EX12 and 28 mm on SWX EX22.
Clamp-ring couplings are recommended. If using soldered connections, the pipe must be cooled near the soldering point (using wet rags, freezer bags or compressed air) so that the casing grommet (arrow A, photo 7) is not heated above 150 °C. In order to reduce the amount of heat needed, remove the support sleeve before soldering.



Photo 6

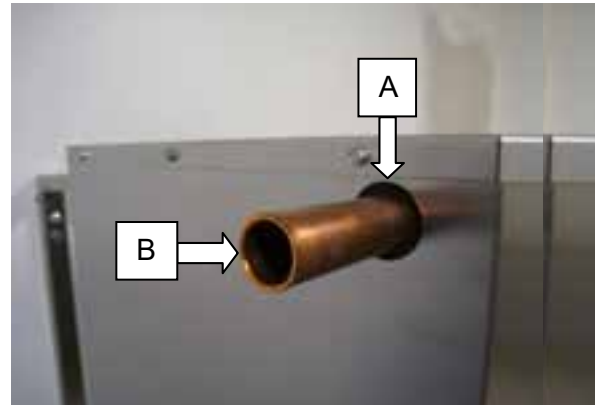


Photo 7

7. Support sleeves must be used together with clamp-ring couplings since the copper pipes are soft annealed. Make sure that the support sleeve is correctly inserted, as indicated by the arrow B in photo 7.
Install the clamp-ring coupling and tighten in accordance with the manufacturer's instructions.
When tightening connections on pipes and valves, these must be held in such way that the tightening torque is not transferred to the fan heater inlet and outlet pipes.

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Electrical connection of the fan motor

1. All installation work must be performed by a qualified electrician.
2. The fan heater is constructed for 400 VAC, 3 phase.
3. Electrical connection to the mains requires fixed wiring. A multi-pole breaker with a minimum 3 mm contact gap must be installed in the fixed installation, using Ex approved components in the risk area.
4. There is connection (see photo 8) for external equipotential bonding at the back of the heater chassis, indicated by a ground symbol. Minimum conductor size shall be 4 mm² and torque of M6 screw is 6Nm. Spring washer between ring terminal and screw.



Photo 8

5. Install the enclosed cable ties on the inside of the bracket where the fan motor cable will be attached, see photo 9



Photo 9



Photo 10

6. Install the cable glands and the stopping plugs in the enclosed Ex junction box to match the wiring, see photo 10 for an example. Also read through the separate installation instructions for the Ex junction box.
7. Mount the junction box next to the bracket where the fan motor connection cable will be attached, see photo 11.



Photo 11



Photo 12

8. Attach the fan motor connection cable as shown in photo 12. The fan motor wiring diagram can be found in appendix C. The fan motor is fitted with PTC thermistors to protect against overheating, and must therefore be connected to motor protector U-EK230E (Ziehl Abegg) and a contactor (see appendix C), placed in non hazardous areas.
9. Make sure that the fan motor rotates clockwise, as seen through the protective grille.

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Cleaning/maintenance

1. Disconnect the power to the fan motor and follow any applicable regulations concerning work in explosive gas environments.
2. The fan heater has a quick release inspection/cleaning plate and a lock nut and lock washer (arrow) for equipotential bonding, see photo 13.



Photo 13



Photo 14

3. Disengage the quick release locks by turning them a quarter turn counter-clockwise, see photo 14.

Cleaning and maintenance of the fan motor

Must be carried out according to the separate instructions for the fan motor.

Cleaning of the water coil

For optimum performance, the fan heater must be cleaned regularly.

The interval between each cleaning depends on the environment the fan heater is used in.

Dust on the water battery's aluminium fins impedes the airflow and its heat exchanging performance.

The coil must therefore be kept clean.



Important!

Do not forget to reinstall the lock washer and lock nut for equipotential bonding in the plate, following the completed maintenance procedure.