

Fan heater SWX EX

Fan heater for environments with a temporary explosion risk

Application

SWX EX is a fan heater specially designed for environments with a temporary explosion risk (Zone 1 and Zone 2).

Comfort

Frico's fan heaters provide comfortable heat quickly. The SWX fan heater makes it possible to bring comfort to environments with special requirements.

Operation and economy

Frico's fan heaters have a long life and providing fast and effective heating at a low cost. Smart design facilitates maintenance and makes installation easy.

Design

Fan heater SWX has a robust design, adapted to the requirements of harsh environments. Supplied with air director with individually adjustable louvers that direct the air flow on one plane. SWX EX has an inspection hatch with quick release.

Product specifications

- Approved for use in zones where the explosion risk is due to gas or fumes (Equipment category 2G).
- Meets the requirements of the ATEX Directive 94/9/EC in the EU/EFTA.
- Thermistor motor protection U-EK230E included. To comply with the approval, this must be installed. Only for mounting outside ATEX-classed zones.
- Water coil with copper pipe. Aluminium fins.
- Wall brackets included.
- Casing in stainless steel (EN 1.4016).

SWX is also available in versions for corrosive environments, dusty environments and rooms with high temperatures – see separate chapter for SWX C/D/H.

Technical specifications

Fan heater SWX EX, for environments with a temporary explosion risk. (IP44)

Type	Heat output*1 [kW]	Air flow [m³/h]	Air flow [m³/s]	Sound level*2 [dB(A)]	$\Delta t^{*1,3}$ [°C]	Air throw [m]	Water volume*4 [m]	Voltage [V]	Amperage [A]	HxWxD [mm]	Weight [kg]
SWXEX12	21	2250	0,6	61	28	8	8	400V3~	0,27	530x550x380	25
SWXEX22	39	4150	1,2	67	27	10	10	400V3~	0,6	655x705x430	42

*1) Applicable at water temperature 80/60 °C, air temperature, in +15 °C.


*2) Conditions: Distance to the unit 5 metres.

*3) Δt = temperature rise of passing air at maximum heat output.

*4) Water volume inside water coil.

Intended for water temperatures up to +125 °C and 16 bar.

Max. surrounding temperature -20 - +40 °C.

SWX EX:  II 2 G c Ex e IIB T4 Gb.

SWX EX is approved for use in zones where the explosion risk is due to gas or fumes (Equipment category 2G).

SWX EX has temperature class T4 (max 135 °C).

SWX EX meets the requirements of the ATEX Directive 94/9/EC for the EU/EFTA

SWX EX is manufactured in accordance with:

- LVD Directives: EN 60355-1 and EN 60335-2-30
- EMC Directives: EN 61000-6-1, EN 61000-6-2, EN 61000-6-3 and EN 61000-6-4
- EMF Directive: EN 62233

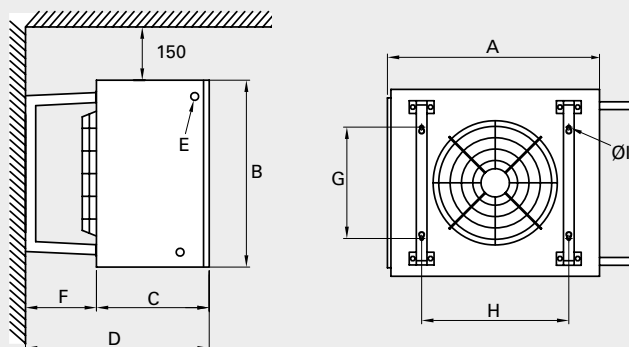
Frico's quality management system is certified by DNV Nemko Presafe AS (notified body number: 2460) in accordance with Presafe 15ATEX 7676X certificate.

Testing and certification of SWX EX have been carried out by NEMKO.

Applied testing standards:

- Protection class IP44, IEC/EN 60529
- General ATEX requirements IEC/EN 60079-0
- Ex "e" (increased safety) IEC/EN 60079-7

Dimensions



[mm]	A	B	C	D	E	F	G	H	ØI
SWXEX12	550	530	380	630	22	250	330	410	10
SWXEX22	705	655	430	700	22	270	420	505	10

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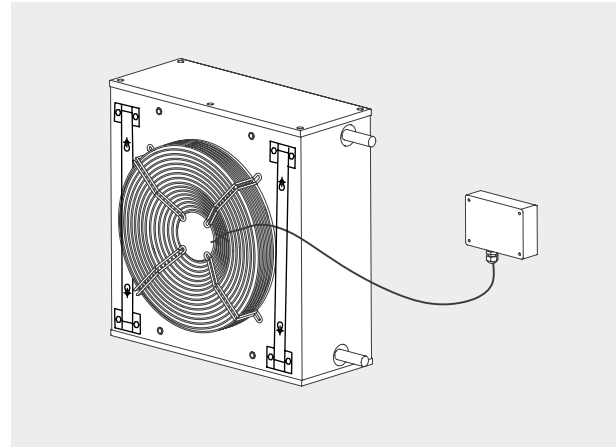
Mounting and connection

Mounting

The fan heaters are mounted on the wall. Wall bracket included. For minimum distance, see dimension diagrams.

Connection

The fan motor is connected to a detached terminal box, which is mounted on a wall next to the unit (0,85 m cable).



Connection of heating coil

By turning the fan heater, pipe connections are possible on both sides. Units that are likely to be exposed to air temperatures below zero, for example when a mixing cabinet is used, should be equipped with external frost protection to ensure that the heating coil is not damaged by frost.

Control options

Control by thermostat only

The thermostat starts/stops the fan and also controls the heat supply on/off. The fan is set to run on high speed.

Complete regulation kit:

- Therm-atex, ATEX capillary tube thermostat
- VLSP, pressure independent valve system on/off

Controls and accessories

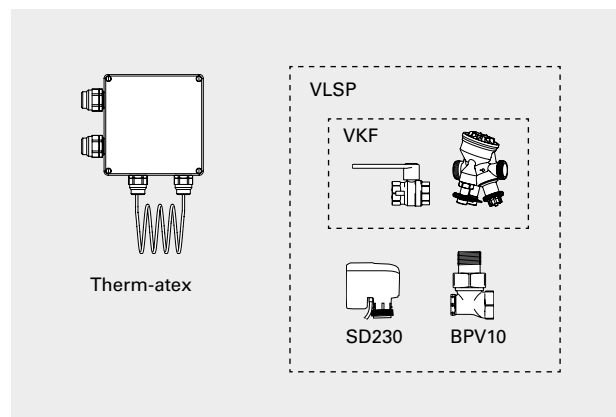
Therm-atex, ATEX capillary tube thermostat

Capillary tube thermostat with concealed knob for ATEX zones 1 and 2. Setting range -20 - +40 °C. Max. breaking current: 16 (2.5)A, $\cos \varphi = 1(0.6)$, AC 230V. IP66.

VLSP, pressure independent valve system on/off

The valve system VLSP consists of the following:

- VKF, valve kit
 - TAC, pressure independent regulation and adjustment valve
 - AV, shut off valve
- SD230, actuator on/off 230V
- BPV10, bypass valve



Type	Description	HxWxD [mm]
Therm-atex	ATEX capillary tube thermostat for zones 1 and 2, IP66	215x154x90
VKF20*	Valve kit DN20	
VKF25*	Valve kit DN25	
SD230*	Actuator on/off 230V	
BPV10*	Bypass valve	

*) Only for mounting outside ATEX-classed zones.

Output charts water

SWX EX

Supply water temperature / Return water temperature 90/70 °C

		Air temperature in +5 °C				Air temperature in +15 °C			
Type	Airflow	Output	Air temp. out	Water flow	Pressure drop	Output	Air temp. out	Water flow	Pressure drop
	[m ³ /h]	[kW]	[°C]	[l/s]	[kPa]	[kW]	[°C]	[l/s]	[kPa]
SWXEX12	2250	30,5	43,4	0,38	12,0	25,6	48,6	0,37	8,6
SWXEX22	4150	54,9	42,5	0,68	18,7	46,2	47,8	0,57	13,6

Supply water temperature / Return water temperature 80/60 °C

		Air temperature in +5 °C				Air temperature in +15 °C			
Type	Airflow	Output	Air temp. out	Water flow	Pressure drop	Output	Air temp. out	Water flow	Pressure drop
	[m ³ /h]	[kW]	[°C]	[l/s]	[kPa]	[kW]	[°C]	[l/s]	[kPa]
SWXEX12	2250	26,0	37,8	0,37	9,0	21,2	42,8	0,20	6,2
SWXEX22	4150	47,0	37,1	0,58	14,2	38,5	42,3	0,47	9,8

Supply water temperature / Return water temperature 60/40 °C

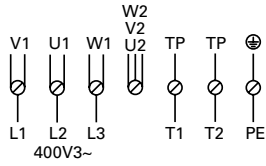
		Air temperature in +5 °C				Air temperature in +15 °C			
Type	Airflow	Output	Air temp. out	Water flow	Pressure drop	Output	Air temp. out	Water flow	Pressure drop
	[m ³ /h]	[kW]	[°C]	[l/s]	[kPa]	[kW]	[°C]	[l/s]	[kPa]
SWXEX12	2250	16,9	26,3	0,21	4,2	12,3	31,1	0,15	2,3
SWXEX22	4150	30,9	26,1	0,38	6,8	22,6	31,0	0,27	3,8

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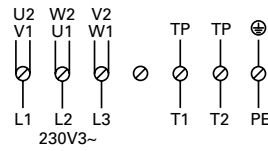
Wiring diagrams

Wiring diagram 57220-1 for fan motor FB035-4DE.4Y.A4P / FB042-4DE.4Y.A4P with separate cables for thermistors.

Y-connection



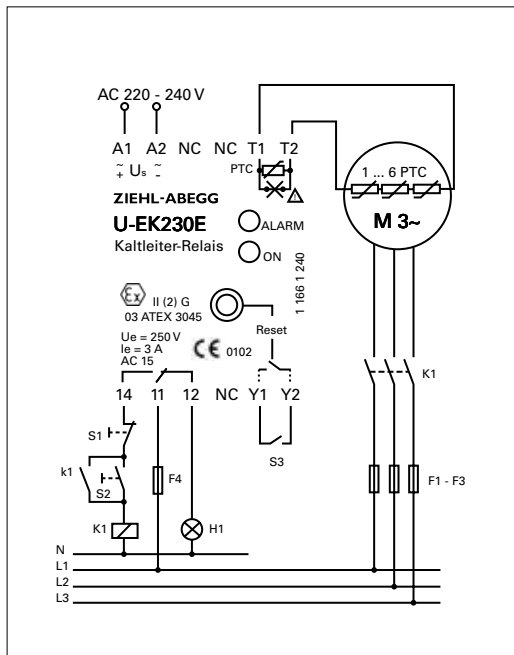
Δ-connection



- U1 - Brown
- V1 - Blue
- W1 - Black
- U2 - Red
- V2 - Grey
- W2 - Orange
- TP - White
- PE - Green-yellow

Max test voltage of the thermistors (TP) is 2.5VDC.

Connecting of fan motor FB035-4DE.4Y.A4P / FB042-4DE.4Y.A4P to motor protection U-EK230E



Therm-atex, ATEX capillary tube thermostat

