Fincoil Solar SE

Industrial dry coolers for explosive atmospheres

General information & application

Industrial dry coolers Fincoil Solar SE have been designed for heavy industrial cooling applications in potentially explosive atmospheres for cooling of various process liquids. Dual coil models are available for simultaneous cooling of LT/HT engine circuits. Applications include diesel and gas engine cooling, turbine cooling, oil cooling and various other processes (transformers, air compressors, etc.).

Liquids	all liquids that do not corrode copper
Capacities	customer specification

Configuration

- Finned coil F5
  - Cu-tubes ø 12.7 mm
  - corrugated Al-fins 0.14 mm, no turbulators
  - fin spacing 2.3 mm
- Two casing widths (SEM=1630 mm, SED=2400 mm)
- Flanges PN10/16
- Forced draught axial fans in a range of different fan speed executions. Fan diameter 914 mm (1 to 14 fans). All fans have corrosion resistant fan blades and fan guards.
- Fan motors available for various power supplies. The motors are squirrel-caged motors for outdoor use built to IECEx standard with F-class insulation and Ex-d flameproof enclosure. Motor protection class IP54/55 and temperature class T3/T4. Motors are equipped with anti-condensation heaters. Motors pre-wired to lockable safety switches.
- All casing parts are of hot dip galvanized steel plates.
- Adjustable mounting legs.
- Fitted with header tube protection panels.
- Manual venting and draining valves.
- Partitions between fans for regulation of the cooler capacity by means of separate use of the fans.
- Standard vertical transport position, fixed on a wooden pallet. Suitable for truck transportation or loading into a container. Wooden seaworthy packing on request.

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Design pressure

Design pressure 10 barg. Each heat exchanger is leak tested with dry air at 15 barg. Higher design pressures on request.

Selection

Fincoil Solar SE dry coolers are always selected and customized on customer request. Please contact Alfa LU-VE for selections.

Benefits

- ATEX-certification for complete unit.
- Heavy duty coil & casing materials, resulting in a long operational product life
- Floating coil construction to compensate for thermal stress
- Plain profile fins make the coil less prone to fouling and easier to clean
- Energy efficient - low total cost of ownership
- Two units can be fitted into a single container side-by-side
- High corrosion resistance (C4-M for casing parts)
- Excellent sound characteristics
- Reliable performance
- Easy-install & maintenance
- Two year full product guarantee

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Options

- Connection/terminal box (CB)
- Vibration damper for legs (VD)
- Expansion tank (ET)
- Motors suitable for frequency converter use
- Arctic environment package (AE)
- Higher mounting legs
- Pressure part design according to ASME

Documentation

For Solar SE dry coolers extensive product & project documentation can be supplied (standard in English) including:

- Mechanical & electrical configuration
- Quality, test & material certificates
- Project reports & documentation
- Installation, operation & maintenance manuals

Certifications

The Alfa LU-VE quality system is in accordance with ISO 9001 and ISO 14001. All products are manufactured according to ATEX (2014/34/EU), machinery (2006/42/EC) and pressure equipment (2014/68/EU) directives.

ATEX classification

CE	Ex h	II	2G	IIB	T3	Gb
1	2	3	4	5	6	7

1 Mark of conformity to the applicable European directives.
2 Community mark specially indicating explosion protection.
3 Equipment Group.
4 Equipment Category
Equipment designed to function in conformity with the operational parameters established by the manufacturer and ensuring high level of protection with category 2G vapors and gases. 2G dry coolers are also suitable for areas requiring 3G units.
5 Equipment explosion group
Group IIB dry coolers are also suitable for environments with IIA classified substances.
6 Temperature class (T3 or T4)
1) Heat transfer coil maximum surface temperature is not allowed to exceed the value on the Ex-nameplate in any operation conditions. Dry coolers cannot operate independently from the process they are connected to.
2) Allowed ambient temperature min/max values comes from the component specs (f.e. motors) and has been marked on the equipment.
7 Equipment protection level (EPL)

Code description

SE	D	6	B	09	T	N5	D	42	H	GS	2G	T3	P	CB	-	AL	2.3	CU	132	1	x	DN65	+	66	1	x	DN80	ET
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20		21		22	23		24	25

1 Fincoil Solar customized air heat exhanger for Ex environment
2 Unit width (M = narrow, D = wide)
3 Number of modules
4 Module length (A = 1400 mm, B = 1800 mm, C = 2100 mm)
5 Fan diameter (09 = 910 mm)
6 Fan speed (T = ~950 rpm, S = ~720 rpm)
7 Power supply (N5 = 3/380-420/50 Hz, N6 = 3/440-480/60, N7 = 3/230/50, N8 = 3/690/50)
8 Motor connection (Y = star, D = delta)
9 Tube rows in air direction (LT-circuit HT-circuit)
10 Air flow (H = vertical, V = horizontal)
11 Casing material/coating (GS = unpainted galvanized steel, Options: MU, M1, M2, M3)
12 Equipment category (2G)
13 Temperature Class (T3 or T4)
14 Packaging (P = Pallet, PT = Pallet & tarpaulin, PH = Pallet & hard board, CN = Container, BO = wooden box)
15 Options (electrical / fan)
16 Fin Material (AL = standard Al, IF = industrial Al, CU = copper, SWR = AlMg2)
17 Fin spacing (mm)
18 Tube material (CU = copper, CT = Copper with turbulators inside)
19 Number of LT circuits
20 Number of LT connections (1 = one inlet/outlet, 2 = two inlets/outlets)
21 LT connection size (e.g. DN65 or AN2.5" for ANSI dimensions)
22 Number of HT circuits (in two circuit application)
23 Number of HT connections (1 = one inlet/outlet, 2 = two inlets/outlets)
24 HT connection size (e.g. DN80 or AN3" for ANSI dimensions)
25 Options (mechanical)

How to contact Alfa LU-VE
Up-to-date Alfa LU-VE contact details for all countries are always available on our website at alfa.luvegroup.com