AlfaBlue BO

Air-cooled transformer oil coolers

General information & application

The AlfaBlue BO series is a modular range of heavy-duty OFAF-type (Oil Forced/Air Forced) oil coolers, specifically designed for cooling transformer oil. AlfaBlue oil coolers are available for both on-board and remote installation.

Capacities	$\Delta T(T_{in/oil} - T_{in/air}) = 35°C$	50 up to 600 kW

Coil

An innovative coil design provides excellent heat transfer. In standard execution oil coolers are fitted with smooth copper or aluminium tubing and industrial fins for reduced fouling and long lasting performance. Available in different fin spacings. Flanged connections available in DN100 and DN150, to fit most oil pumps. Manifolds are provided with draining and venting nozzles. Coil corrosion protection is optional.

Casing

Frame design and construction provides high rigidity against (seismic) vibration and thermal shocks. Casing and framework made of corrosion resistant continuous hot dip galvanized steel. Mounting feet (H/V) manufactured in hot dip galvanized steel. Surface coating protection based on C4 or C5M. Finishing available in different RAL color.

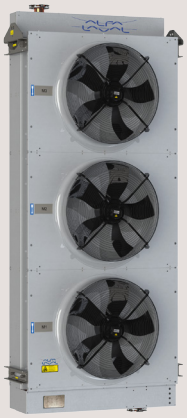
Fan motors

Two solutions available:

- **External rotor** fan motors with balanced aluminium fan blades, available in three fan diameters (800, 900 & 1000 mm). Available with different noise levels. Standard power supply 400/50/3, other power supplies on request. Protection class IP 54 (IP55 on request). Integrated thermo contacts for protection against thermal overload.
- **IEC electrical motors** directly connected to fan impellers. 900 mm fan diameter and different noise/speed levels available. Different power supplies on request.Protection class IP 55.

Options

- Coil corrosion protection
  - Coil coating F-coat (FC), E-coat or Blygold (BY)
  - Aluminium epoxy coated (EP)
  - Seawater resistant fins AlMg (SWR)
  - Copper fins (Cu)
  - Tinned copper fins & tubes

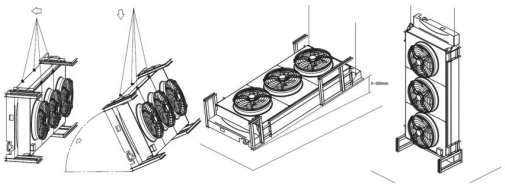


AlfaBlue BO transformer oil cooler for on-board installation

- Special fan motors (IP55, painted fan motors C4/C5, IEC with optional space heaters)
- Electrical options
  - Lockable safety switch (SW)
  - Central terminal connection box (CB)
- Coil protection grid/filters (on request)
- Casing with C5M and/or painted in RAL colour
- Metal skid (SK)
- Seaworthy wooden packing box (WB)

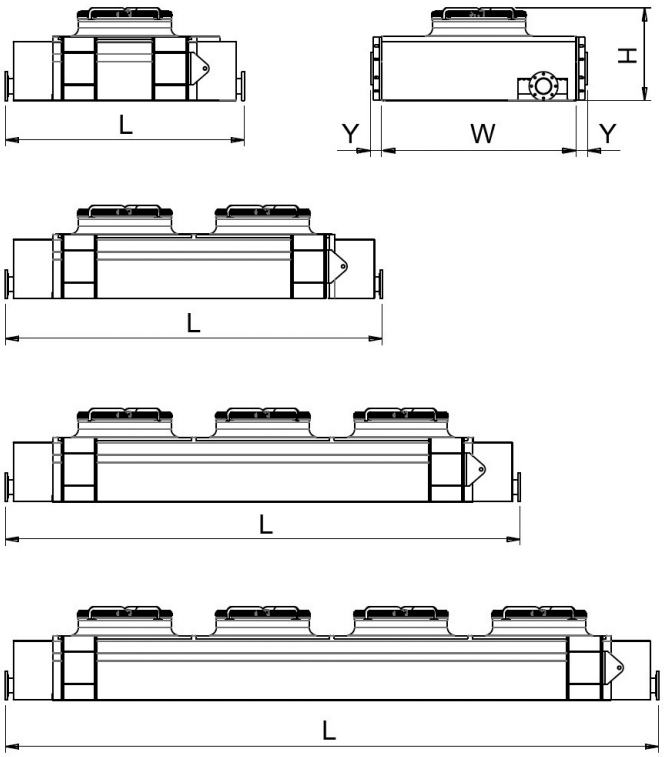
Installation and shipping

Oil coolers are designed for on-board installation directly onto the transformer (I) or remote mounting in horizontal (H) or vertical (V) setup. On-board units are supplied with a re-usable metal skid permitting the transport of two units side by side on truck or container and lifting the product from horizontal to vertical position. Units for remote installation (H/V) are supplied on a wooden pallet, with the metal skid as an option. Seaworthy packaging is optional.



Fin material guideline

Environmental conditions	Recommended fin material/coating					
	High grade aluminium	SWR AlMg2.5	Aluminium F-coat	Aluminium E-coat	Aluminium Epoxy coated	Copper Cu
Urban (low acid)	+	++	+++	+++	++	+
Industrial (acid)	-	+	++	+++	+	-
Coastal (salty)	-	++	+++	+++	++	++
Desert (sandy)	+	++	+++	+++	++	++
Marine (high salty)	-	++	++	+++	+	++
Tropical (high humidity)	+	++	++	+++	+	+



Nr. of fans	Dimension (mm) for copper tubes on-board units								
	L			W				H	Y
	module length			module width					
	C	M	L	S	C	M	L		
1	1670	1870	2070	1200	1450	1690	1930	820	65
2	2670	3070	3470	1200	1450	1690	1930	820	65
3	3670	4270	4870	1200	1450	1690	1930	820	65
4	4670	5470	6270	1200	1450	1690	1930	820	65

Code description

BO	L	Q	IEC	100	2	L	B	Y	36	H	P	7031	SW	-	IF	2.5	CU	Oil
1	2	3	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18

1 AlfaBlue oil cooler (BO=copper tubing, BOA=aluminium tubing)
2 Module width (S, C, M, L)
3 Sound level/fan speed (T=high performance, S=standard, M=medium, L=low, Q=quiet, R=dual fan speed)
4 IEC fan motor (blank= external rotor fan, IEC= IEC fan motor)
5 Fan diameter (80=800, 90=910, 100=1000 mm)
6 Number of fans (1 to 4)
7 Coil length (C, M, L)
8 Nr. of tube rows (B, C or D)
9 Electrical connection star (Y) or delta (D)
10 Nr. of circuits
11 Installation (I=on-board, H=airflow vertical, V=airflow horizontal)
12 Transport packing (P=pallet, SK=container skid)
13 Casing finishing (RAL code, C5M or C4H=unpainted,)
14 Options (SW, CB, OF)
15 Fin material (IF=industrial fins, SWR=seawater resistant AlMg2.5, EP=epoxy coated, FC=F-coated, EC=E-coated, BY=blygold, CU=copper)
16 Fin spacing (2.5, 2.8, 3.0, 3.2, 3.5 mm)
17 Tube material (CU=copper, A=aluminium)
18 Operating mode

Certifications

The Alfa Laval quality system is in accordance with ISO 9001. All products are manufactured according to PED rules.

Design pressure

Design pressure 3 bar at 100 °C. Each heat exchanger is leak tested with dry air and finally flushed with oil to remove any remaining particles.

Selection

Selection and pricing is to be performed with our Alfa Laval air heat exchanger selection software. Please contact our sales organization for details and full technical documentation.

Installation options

Benefits

- Heavy duty design with high corrosion resistance
- Easily cleanable thanks to industrial power fins and removable fan motors
- Fully assembled: easy to connect to the transformer
- Reduced fan motor power consumption as a result of low static pressure
- Excellent sound characteristics
- Reliable performance
- Easy installation & maintenance
- Energy efficient - low total cost of ownership
- Easy access to additional on-line product information (QR code)
- Extended fan motor solutions

How to contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com