

Free Cooling Box FCB 773

Service manual



Introduction

Overview

This is the service manual for the Free cooling box FCB 773 with air inlet in one of the sides, optional which. It is equipped with a compact F5-filter and two economic high flow axial fans.

Table of content

Free Cooling Box FCB 773.....	1
Introduction.....	2
General information – Free Cooling Box FCB 773	3
Technical data	4
Dimensions	6
Flow illustration.....	7
Wiring diagram	8
Preventive maintenance	9
Spare parts list.....	10

Contact

In the table below you can see how to contact the manufacturer and sales offices.

Office	Sweden	Norway	Denmark
Name	Kontrollelektronik Dantherm Air Handling AB	A/S Dantherm avd. Kontrollelektronik	Dantherm Air Handling A/S
Address	Virkesgatan 5	Postboks 147 / Storgatan 29	Marienlystvej 65
	SE-614 31 Söderköping Sweden	NO-1851 Mysen Norway	DK-7800 Skive Denmark
Phone	+46 (0)121 130 40	+47 69 89 37 67	+45 96 14 37 00
Fax	+46 (0)121 133 70	+47 69 89 47 35	+45 96 14 38 20
E-mail	info@kontrollelektronik.se	dantherm.no@dantherm.com	dantherm.dk@dantherm.com
Web	kontrollelektronik.com	www.dantherm.no	www.dantherm-air-handling.com

General information – Free Cooling Box FCB 773

Introduction This section gives you the general information about the unit and this service manual.

Target group The target group of this service manual is the technicians who install and maintain the unit.

Copyright Copying of this service manual, or part of it, is not allowed without written permission from Kontrollelektronik Dantherm Air Handling AB.

Reservations The service manual is subject to changes without notice.

CE - Declaration of Conformity Kontrollelektronik Dantherm Air Handling AB, Virkesgatan 5, SE-614 31 Söderköping hereby declare that the unit are in conformity with the following directives:

- FCB 773

2006/95/EG	Low Voltage Directive including 93/68/EEC where required
86/336 EEC	EMC Directive including 92/31/EEC and 93/68/EEC
89/392 EEC	Machine Directive

The product is manufactured according to SS-EN 604 39-1

The product is manufactured with components which follow the application standards for Low Voltage Directive and in case of norms for EMC in EU countries.

The product is controlled and tested before delivery according to the following:


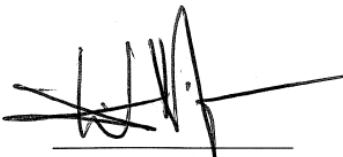
Real test of built in functions with connected temperature sensors and damper actuators.

Inspection of labeling and marking.

Ocular inspection of mounted materials and electrical connections.

Inspection that all parameter and settings are set to delivery position.

Söderköping 30.06.2008

	
Pia Grandelag Managing director	Henrik Lindgren Mechanical Designer

Recycling The unit is designed to last for many years. When the time comes for the unit to be recycled, the unit should be recycled according to national rules and producers to protect the environment.

Technical data

Free Cooling Performance

The table below shows the performance of the Free cooling unit:

Specification	48V DC	230V AC
Air flow	622 l/s (2240 m ³ /h)	622 l/s (2240 m ³ /h)
Free cooling capacity	746 W/°C	746 W/°C
Free cooling capacity at $\Delta t=7^{\circ}\text{C}$	5,2 kW	5,2 kW
Power consumption	280 W	275 W
Sound pressure at 3m from shelter	Approx. 40dBA	Approx. 40dBA
External available pressure drop	50 Pa	50 Pa

Cabinet data

Data of the cabinet are shown in the following table:

Specification	Designation	Value
Weight	Controller included	25 kg
Metal sheet material	Aluzinc AZ150	1,0-1,5 mm

Fan motor data

Data of the fan motor is shown in the following table:

Specification	48V DC	230V AC
Voltage nominal	48V DC	230V AC
Current	5,2 A	1,12 A
Power consumption	278 W (@53V DC)	270 W
Speed	2600 rpm	1100 rpm

Continued overleaf

Technical data, *continued*

Filter data

In the table below the data of the filter are specified:

Specification	Compact filter	
Type	Compact filter	
Removal efficiency	F5	
Dimensions	670 x 295 x 70	
Total Area	4,3 m ²	
Filter monitor setting	85 Pa (at 6V DC signal)	

Controlling

The table below show the components and types for controlling of the Free cooling unit:

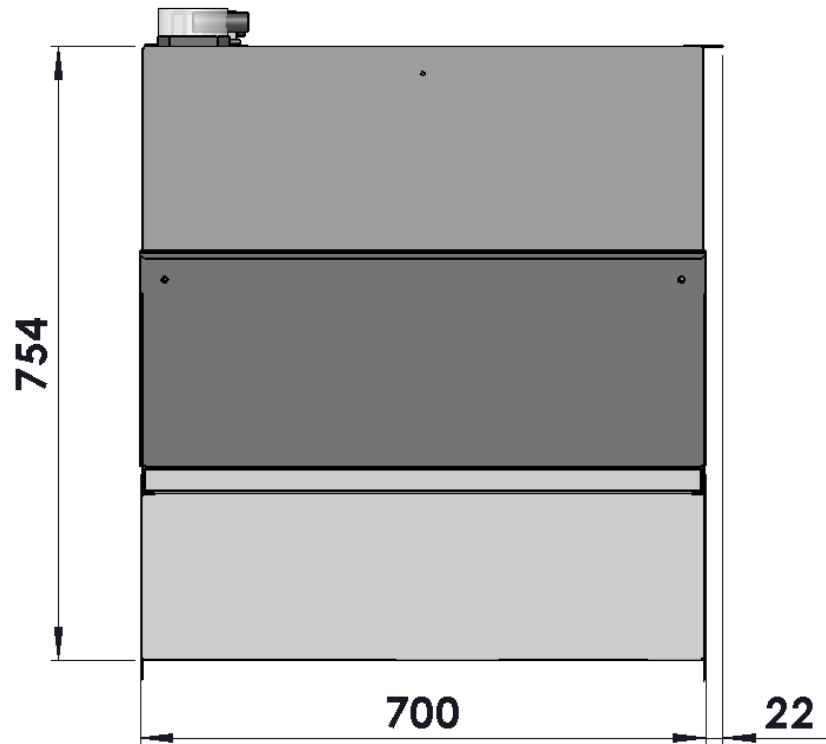
Specification	48V DC	230V AC
Control unit	BCT 48 (See separate manual)	
Indoor temperature sensor	RTT-1	
Filter monitor	JDW5	

Dimensions

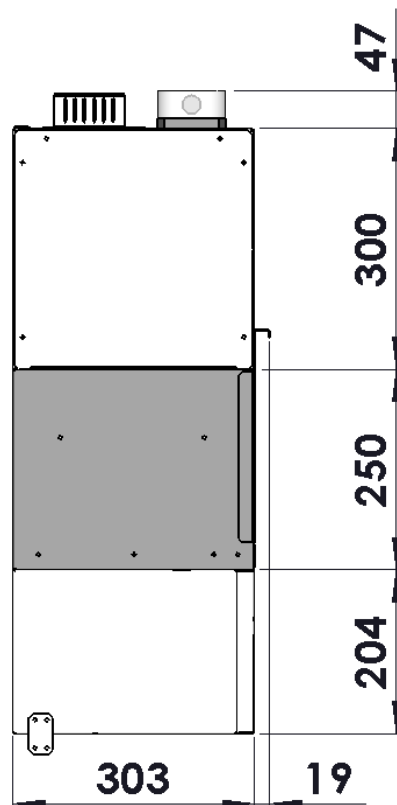
Illustration

This drawing illustrates the dimensions of the Free cooling unit:

Side

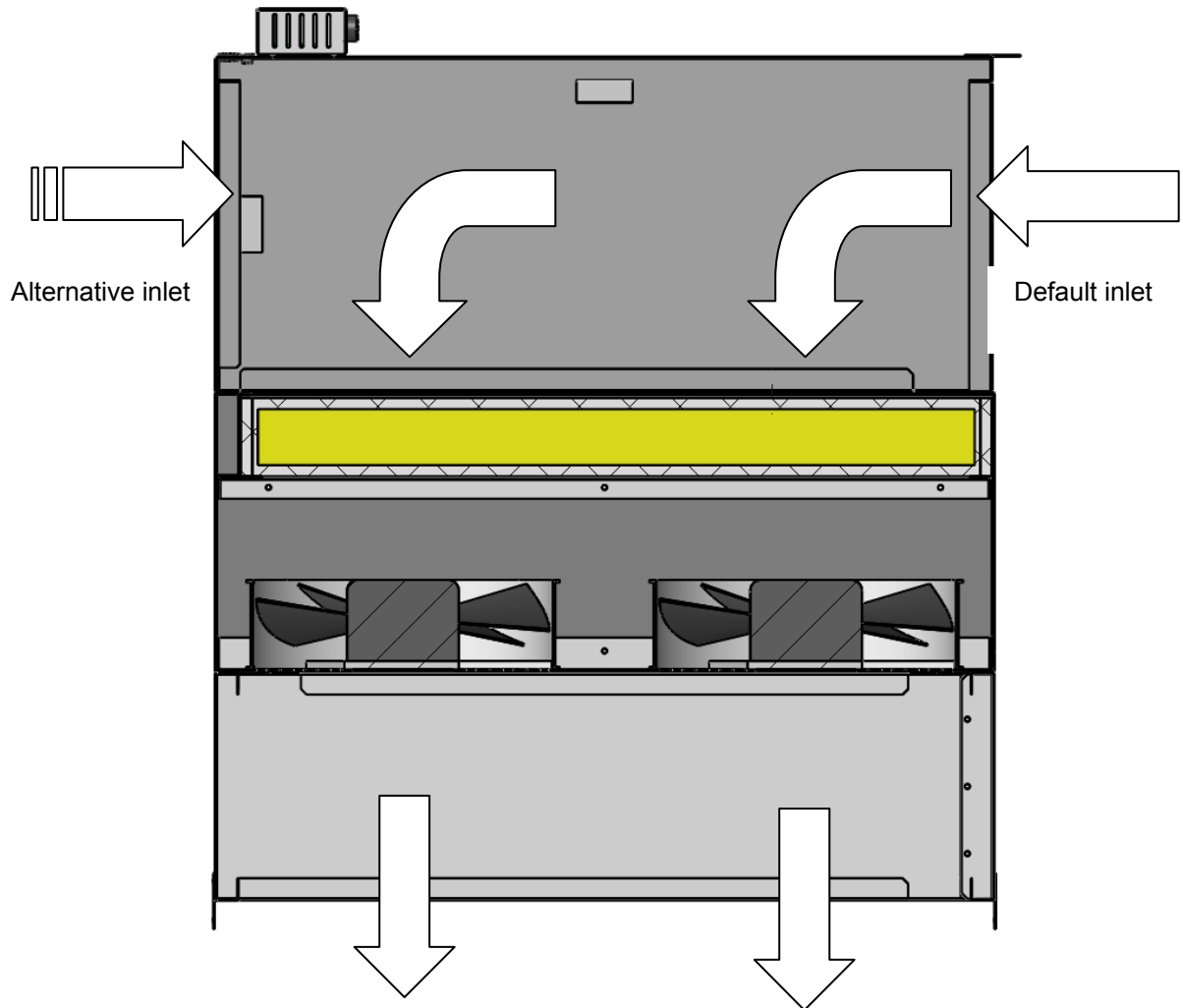


Front

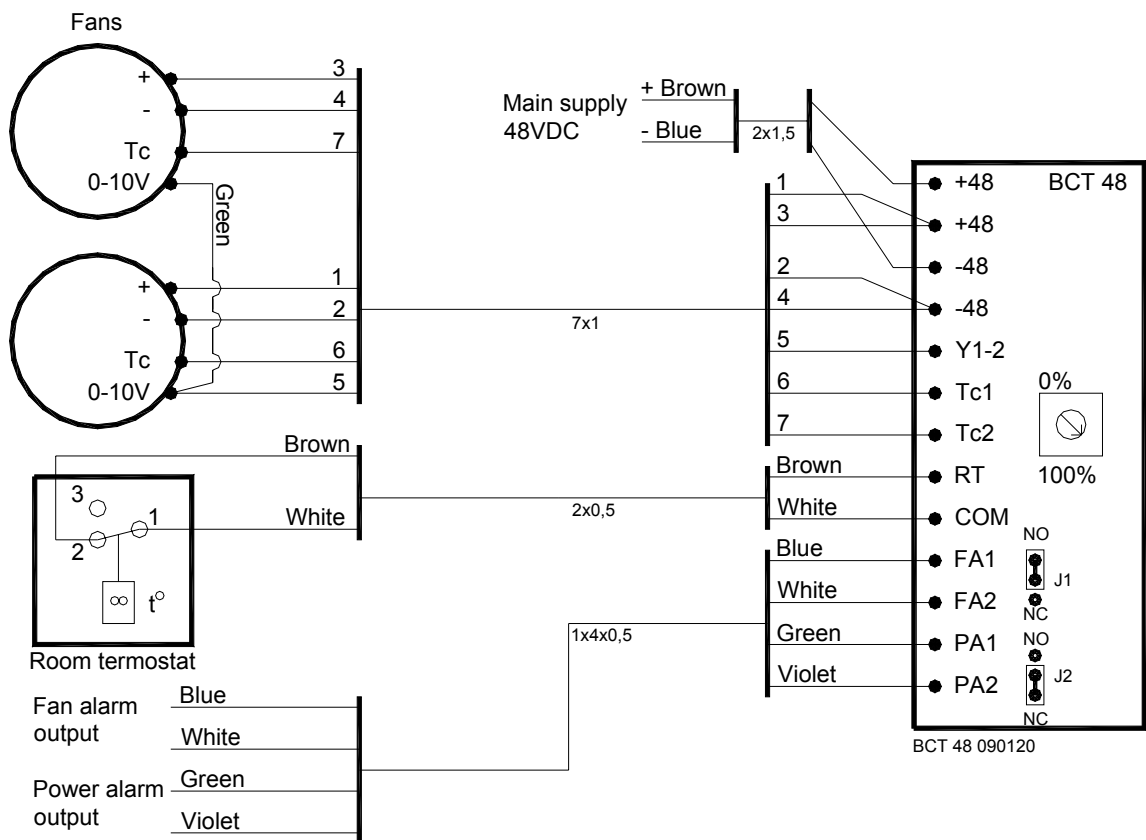


Flow illustration

Flow The picture below schematically shows the air flow.



Wiring diagram



Preventive maintenance

Introduction

The unit needs preventive maintenance with specific intervals to avoid breakdown or inefficient operation. It is important to notice that interval between maintenance can vary depending on the specific environment.

Caution!

Switch off all power to the unit before working on the unit!

Make sure that all work has been performed before switching on the power again.

Interval

Kontrollelektronik Dantherm Air Handling AB recommends that intervals between preventive maintenance do not exceed 1 year. It is also our recommendation that the site and unit is examined closely during the first preventive maintenance to determine whether the interval is too long. We recommend that preventive maintenance visits are planned to occur in springtime.

Condition for warranty

The factory warranty is only valid if documented preventive maintenance has been carried out with an interval of maximum 1 year. The documentation could be in form of a written log.

Recommended approach

The recommended approach when performing a preventive maintenance visit is:

Step	Action
1	Make sure that the power to the unit is safely switched off.
2	Remove the worn-out filter and clean the unit carefully.
3	Clean the dampers and check them regarding function and tightness.
4	Clean the fan and check its mounting.
5	Check and clean the air intake and exhaust accessories.
6	Insert the new filter carefully into the unit.
7	Close the unit and make sure that the service is completed correctly.
8	Turn on the power to the unit.

Function tests

Fan and filter alarm function tests can be done by the following actions.

Function test	Action
Filter	Open the service door and put a plate of carton or similar on the intake side of the filter, blocking a big part of the filter area. Close the service door, run the free cooling unit and check that filter alarm is given. Stop and remove the plate.
Fan	Open the lid to the controlling unit and remove one of the cables connected to the connector marked "Tc1" or "Tc2". Close the lid, run the free cooling unit and check that fan alarm is given. Restore the controller.

Spare parts list

List

Below are the complete list of spare parts with part numbers:

Spare part	Type	Part number
Compact filter	F5, 670 x 295 x 70 mm	900-07633417
Fan 48V DC	W1G250-HH67-52, 48 V DC	023-92184831
Fan 230V AC	W2E250-HL06-01, 230V AC	023-92184844
Control Unit 48V DC	BCT 48	500-24771619
Indoor temp. sensor	RTT-1	889-350203
Filter monitor	JDW5	021-422314

Contact

In the table below you can see how to contact the manufacturer and sales offices.

Office	Sweden	Norway	Denmark
Name	Kontrollelektronik Dantherm Air Handling AB	A/S Dantherm avd. Kontrollelektronik	Dantherm Air Handling A/S
Address	Virkesgatan 5	Postboks 147 / Storgatan 29	Marienlystvej 65
	SE-614 31 Söderköping Sweden	NO-1851 Mysen Norway	DK-7800 Skive Denmark
Phone	+46 (0)121 130 40	+47 69 89 37 67	+45 96 14 37 00
Fax	+46 (0)121 133 70	+47 69 89 47 35	+45 96 14 38 20
E-mail	info@kontrollelektronik.se	dantherm.no@dantherm.com	dantherm.dk@dantherm.com
Web	kontrollelektronik.com	www.dantherm.no	www.dantherm-air-handling.com