AFFUGTERE / DEHUMIDIFIERS /
ENTFEUCHTER / DESHUMIDIFICATEURS

CDF 35 - 45

No. 975682 – Version 2 – 01.09.03

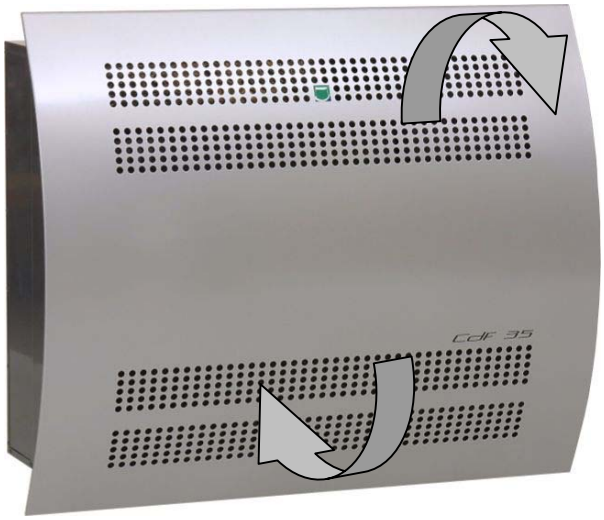
Dantherm®

Environmental Air Management

Contents

1. Description of function

CDF 35 and CDF 45 are working in accordance with the condensation principle. The humid air is drawn into the unit by a fan. When passing through the evaporator the air is cooled down to below dew point and water vapour is condensed into water, which is drained away. The now dry air is then passed over the condenser coil where the air is heated. As a result of the released evaporator heat and the working energy of the compressor being turned into heat energy, more heat is returned to the air than was previously extracted. This extra heat corresponds to an approximate increase in temperature of 5ºC. The repeated circulation of air through the unit reduces the relative humidity, giving very rapid but gentle drying.



Warmer and dehumidified air

Warm, humid air

1.1 Technical data

		CDF 35	CDF 45
Working area – humidity	**%RH**	40 - 100	40 – 100
Working area – temperature	**ºC**	3 - 30	3 – 30
Air volume at max. external pressure	**m3/h**	250	500
Power supply	**V/Hz**	1x230/50	1x230/50
Max. power consumption	**kW**	0,70	1,2
Max. ampere consumption	**A**	3,0	5,3
Refrigerant		R407C	R407C
Quantity of refrigerant	**kg**	0,6	0,950
Sound level (1 m away from unit)	**dB(A)**	47	49
Weight	**kg**	60	74
Dimensions – H x L x W	**mm**	800 x 950 x 315	800x1260x315

2. Installation of the unit

2.1 Suspension

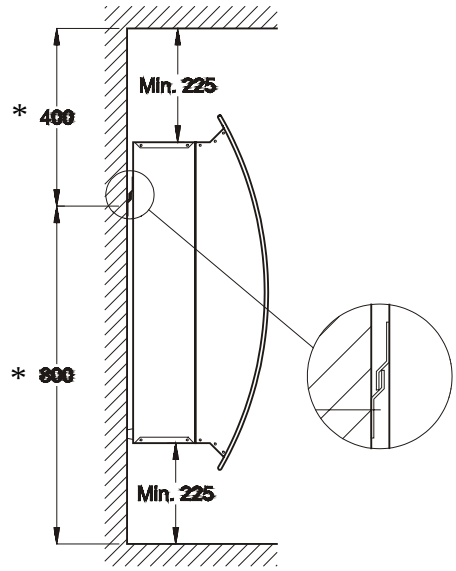
The wall suspension bar supplied with the unit is fixed to the wall and the dehumidifier is hung up on it. It is important to mount the unit in a horizontal position to secure correct outflow of the condensate water.

To make sure that the room air passes unimpededly through the dehumidifier, air inlet and air outlet openings must be free.

It is important that the dehumidifier is not installed near a source of heat as for example a radiator, and doors and windows must be kept closed when the dehumidifier is in function.

NOTE! Dantherm recommends a minimum distance between dehumidifier and ceiling and dehumidifier and floor of 225 mm.

*The dimensions indicate the placing of the wall suspension bar.



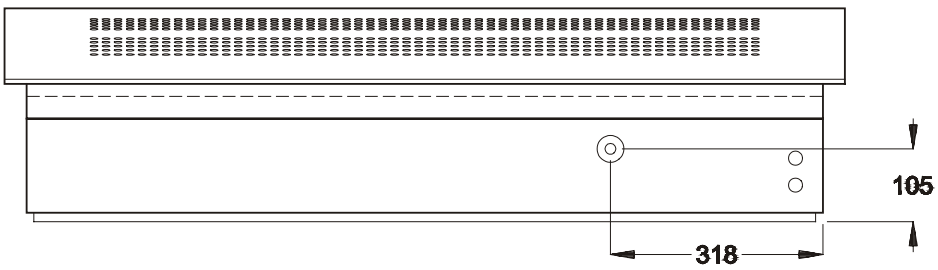
2.2 Condensate outlet

The condensate outlet is located at the bottom of the dehumidifier. The unit has a drain spigot intended for connection of a ½'' flexible or fixed water connection. If water drain through the wall is chosen, a suitable hole is made in the wall and the condensate hose is led out through this hole, before suspending the dehumidifier on the wall suspension bar.

It is important that the hose from the dehumidifier to the drainage has a fall of at least 2% to make sure that the water runs away from the condensate tray.

As an alternative a condensate pump can be fitted at the water outlet to pump the water to a drain.

The placing of the condensate outlet is shown on the drawing below – the unit is seen from above.



2.3 Access to the control

Remove the front panel by screwing off two screws on top of the dehumidifier. Lift the front panel vertically upwards and then pull it horizontally away from the unit.

The control of the unit is located in a box on top of the compressor. To get access to the control you have to screw off the screws on front of the box lid. Push the lid towards the rear of the dehumidifier and then pull it away from the box.

3. Connection of power supply

Power is connected to the unit in accordance with the nameplate. Please refer to the wiring diagrams on the pages 31-32.

NOTE! All electrical connections must be made in accordance with local power supply company regulations.

4. Operation

4.1 Built in hygrostat

The dehumidifier is controlled by a built-in hygrostat that is set to approx. 60% RH. When the hygrostat registers a relative humidity of more than 60%RH, the compressor and the fan automatically switch on and the dehumidifier starts to dehumidify. The hygrostat is located next to the evaporator at the bottom of the compressor housing.

NOTE! If the air humidity is below 60%RH, the unit will not start when the power is connected.

If you want to set the hygrostat at a lower relative humidity than 60%, the set screw has to be turned clockwise.

We recommend installing an external hygrostat if you want to change/adjust the setting of relative humidity very often.

4.1.1 Connection of external hygrostat

Disconnect the built-in hygrostat from the terminals 21/22 and connect the external hygrostat instead. The hygrostat cable is led out through the bottom of the unit and the hygrostat is then fixed to a wall in an appropriate place. The outlet for the external hygrostat is 12 V.

4.2 Fan control

When the dehumidifier is started by the hygrostat, the fan is coupled in at the same time as the compressor.

If continuous ventilation is required – i.e. independent of the dehumidification demand – a bridge must be made between the terminals 25 and 26.

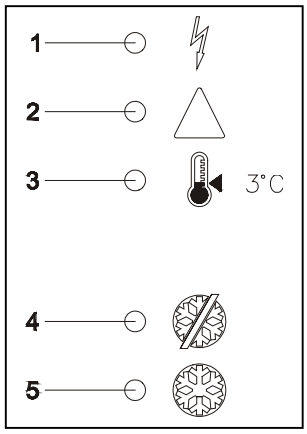
4.3 Compressor control

The number of compressor starts is limited by a 6 minutes timer, which starts up when switching on the compressor. The timer must have come to an end before the compressor can be switched on again.

Each time the unit has been switched off on the main switch, either by the built-in hygrostat or by an external hygrostat, it will take 30 seconds before the unit can be switched on again. This is a safety function protecting the compressor against overloading caused by too high pressure in the cooling circuit at start up.

4.4 Display indication

A display on the side of the unit clearly indicates the working modes.



1. Power is on
The LED lights up in green when power is connected to the unit.

During continuous ventilation there are no display indications. In this operation mode the flash will light up constantly in green to show that power is on.

2. Cooling circuit failure – the dehumidifier is switched off
Pressure or temperature on the HP side of the cooling circuit is too high and therefore the unit was switched off automatically in order to protect the compressor. After 45 minutes the unit restarts automatically.

After restart the triangle LED will flash on and off in red to indicate that the unit is working and that the condenser sensor has registered a failure on the unit. To turn off the triangle LED, disconnect and connect the power supply to the unit.

3. Ambient temperature below 3°C – the dehumidifier is switched off.
The dehumidifier starts again automatically when the ambient temperature increases to more than 3°C**.**

4. Defrosting mode – the evaporator is being defrosted
The LEDs 4 and 5 light up during defrosting of the evaporator. In defrosting mode the compressor is working and the fan is stopped. When the evaporator sensor has registered a temperature higher than 5°C the LEDs 4 and 5 are turned off.

5. Ice formation on the evaporator
The defrost function allows icing up for 30 minutes before defrosting of the evaporator coil is activated.

4.5 Defrosting

Active, demand-controlled defrosting is incorporated into the electronic control. The evaporator coil is defrosted by means of hot refrigerant bypassing the condenser and being fed through the evaporator.

If the temperature falls to below 20ºC the evaporator may start to ice up after a short time. When the evaporator sensor registers a temperature lower than 5ºC it will let the unit work in dehumidification mode for further 30 minutes before switching over to defrosting mode.

4.6 Safety circuit

If the temperature in the dehumidifier increases to a temperature of more than 55ºC (in case of fan failure or room air temperature higher than 30ºC), then the compressor stops automatically to avoid damaging it. After 45 minutes the compressor starts again automatically.

5. Maintenance

The dehumidifier requires very little attention for trouble free running. All the necessary safety and control functions have been built in. The fan motor and the compressor have permanent lubrication and require no particular maintenance.

5.1 Cleaning of the filter

The air inlet filter has to be checked once a month and cleaned, if necessary. Remove the front cover panel of the unit and take out the filter for cleaning. It can either be be rinsed in tepid soapy water or, if not very dirty, vacuumed with a vacuum cleaner.

5.2 Cleaning of the dehumidifier

Once a year the front cover panel should be removed in order to check the inside of the dehumidifier. If the dehumidifier is dirty it should be cleaned by vacuum cleaning. The condenser in particular should be thoroughly vacuumed. If the evaporator is badly soiled, it may be washed in tepid soapy water.

6. Faults and how to remedy them

The dehumidifier does not work, no light in the LEDs on the display:

1. Check the external fuses.
2. Check the power supply to the unit.

The compressor does not work, the triangle LED lights up constantly in red:

The compressor stopped automatically because the temperature on the condenser was too high. If the unit does not start again after 45 minutes, the following things must be checked:

3. Check that the fan is running
4. Check if the filter is dirty
5. Check if evaporator and condenser coils are dirty
6. Check if the room temperature is higher than 30°C. If it is higher than 30°C, the dehumidifier must be stopped.
7. Check that the front cover panel is not covered up/blocked.

The dehumidifier does not work and the thermometer LED on the display is lit in red:

8. The room temperature is lower than 3°C and the dehumidifier has been switched off automatically. Wait till the temperature has increased to more than 3°C.

The dehumidifier does not work and the lighting LED on the display is lit in green:

9. Check the built-in or the external hygrostat by setting it to a low relative humidity, f.inst. 10 – 20%RH. If the unit still does not start, check the built-in or external hygrostat for defects.

If you cannot find the reason for the fault, switch off the unit immediately in order to prevent further damage.

Contact a service technician or a Dantherm representative.

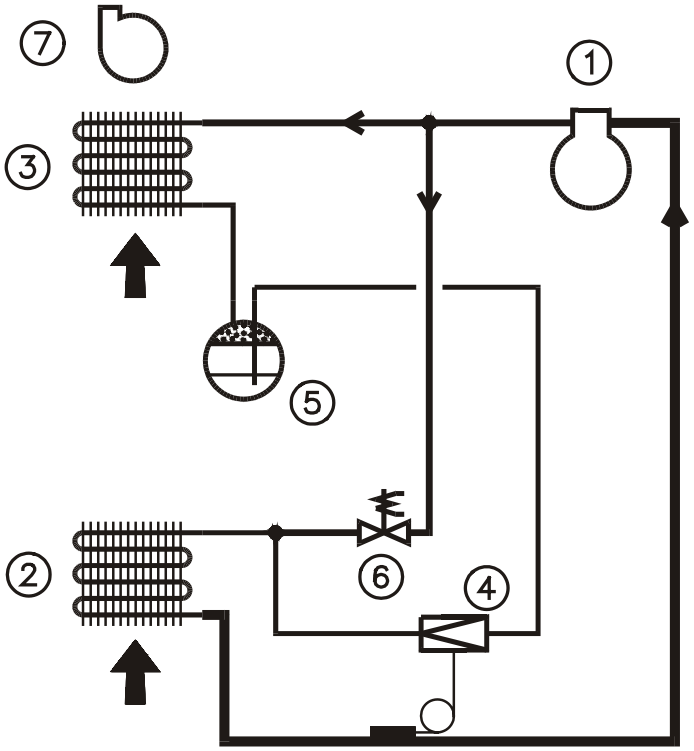
NOTE! If the dehumidifier is not functioning correctly, shut it down immediately.

Disposal

This unit contains refrigerant type R407C and compressor oil. When scrapping the unit, bring the compressor to a place of discharge which is approved by the authorities.

7. Kølekredsløb / Cooling Circuit / Kältekreislauf / Circuit frigorifique

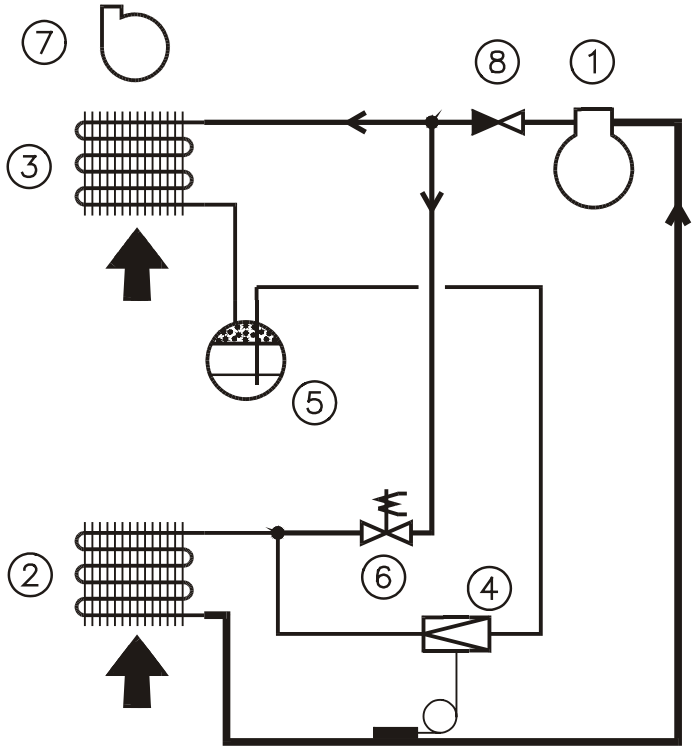
CDF 35 – 1x230V/50Hz



1. Kompressor, compressor, Kompressor, compresseur
2. Fordamper, evaporator, Verdampfer, évaporateur
3. Luftkølet kondensator, air-cooled condensor, luftgekühlter Kondensator, condenseur à air
4. Termo ekspansionsventil, thermostatic expansion valve, thermostatisches Expansionsventil, détendeur
5. Væskebeholder/tørrefilter, receiver/liquid line drier, Receiver/Trockenfilter, collecteur/filtre anti-humidité
6. Magnetventil, solenoid valve, Magnetventil, electro-vanne d'égalisation de pressions
7. Ventilator, fan, Ventilator, ventilateur

Kølekredsløb / Cooling Circuit / Kältekreislauf / Circuit frigorifique

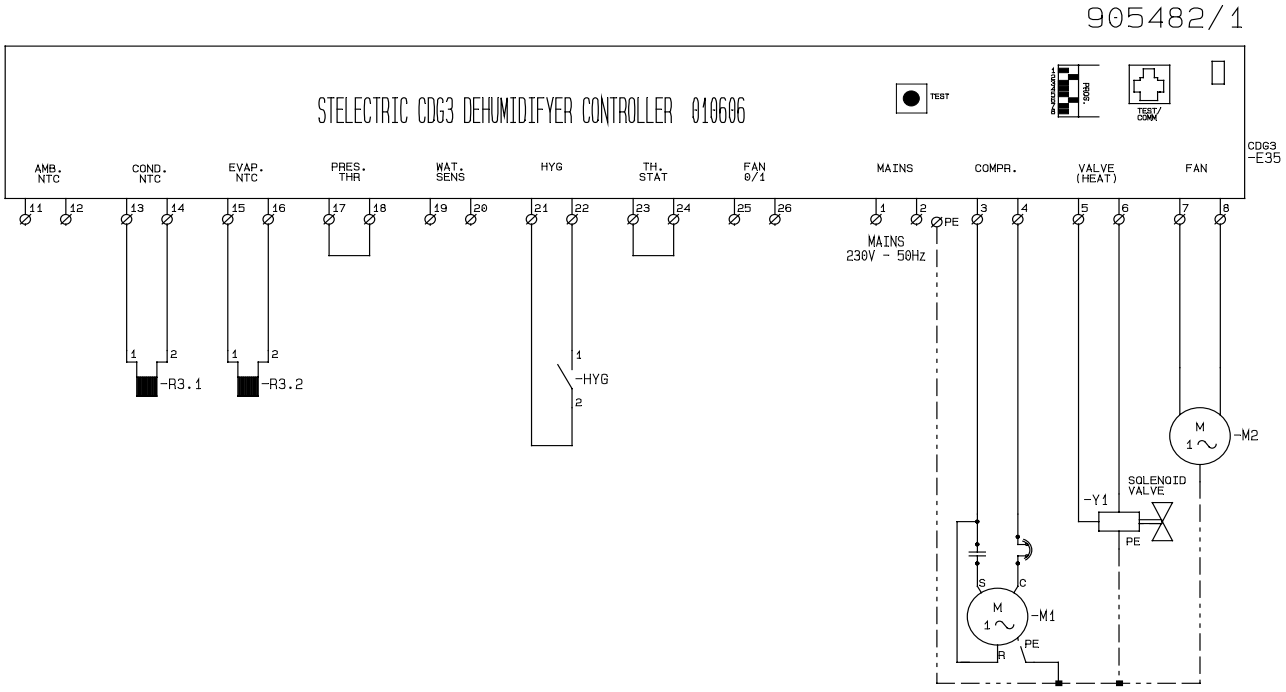
CDF 45



1. Kompressor, compressor, Kompressor, compresseur
2. Fordamper, evaporator, Verdampfer, évaporateur
3. Luftkølet kondensator, air-cooled condensor, luftgekühlter Kondensator, condenseur à air
4. Termo ekspansionsventil, thermostatic expansion valve, thermostatisches Expansionsventil, détendeur
5. Væskebeholder/tørrefilter, receiver/liquid line drier, Receiver/Trockenfilter, collecteur/filtre anti-humidité
6. Magnetventil, solenoid valve, Magnetventil, electro-vanne d'égalisation de pressions
7. Ventilator, fan, Ventilator, ventilateur
8. Kontra ventil, non-return valve, Rückschlagventil, clapet anti-retour

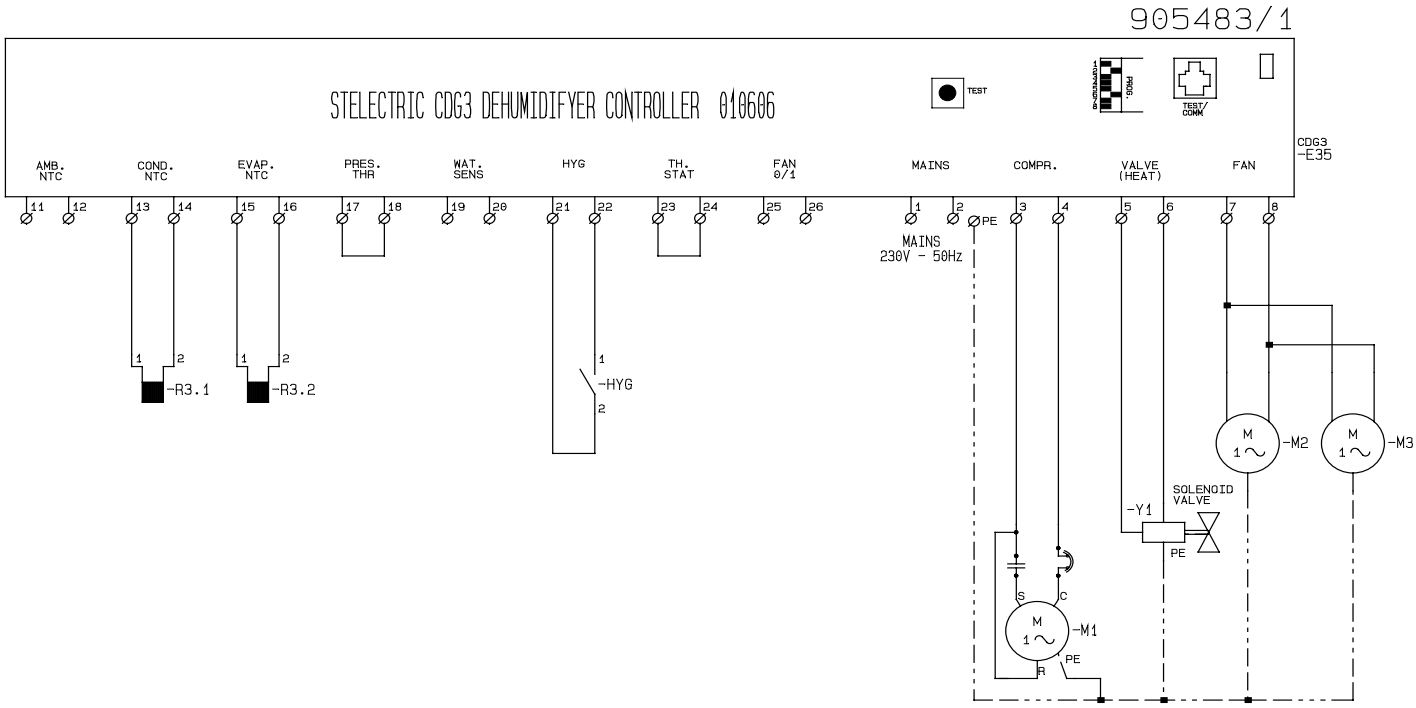
8. El-diagram / Wiring diagram / Schaltplan / Schéma électrique

CDF 35 – 1 x 230V/50Hz



El-diagram / Wiring diagram / Schaltplan / Schéma électrique

CDF 45 – 1 x 230V/50Hz

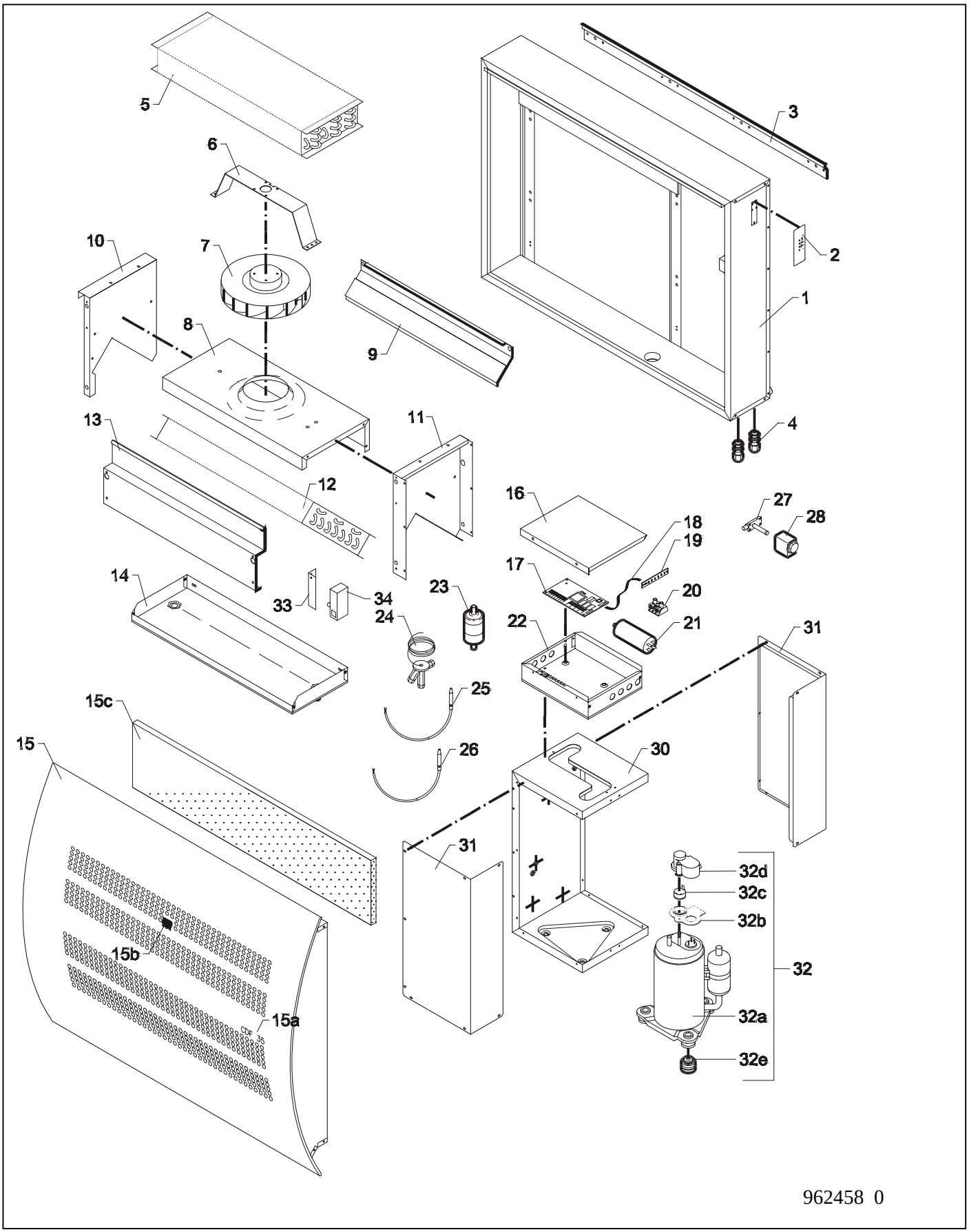


Ordforklaring til el-diagram / Legend for wiring diagram / Legende für Schaltplan / Légende du schéma électrique

CDF 35 / CDF 45

Position	Beskrivelse	Designation	Beschreibung	Désignation
R3.1	Kondensatorføler	Condenser sensor	Kondensatorfühler	Sonde du condenseur
R3.2	Fordamperføler	Evaporator sensor	Verdampferfühler	Sonde d’évaporateur
HYG	Indbygget hygrostat	Built-in hygrostat	Eingebauter Hygrostat	Hygrostat incorporé
M2	Ventilatormotor	Fan moto	Ventilatormotor	Moteur de ventialteur
M3	Ventilatormotor	Fan motor	Ventilatormotor	Moteur de ventilateur
Y1	Magnetventil	Solenoid valve	Magnetventil	Electrovanne
M1	Kompressormotor	Compressor motor	Kompressormotor	Moteur de compresseur

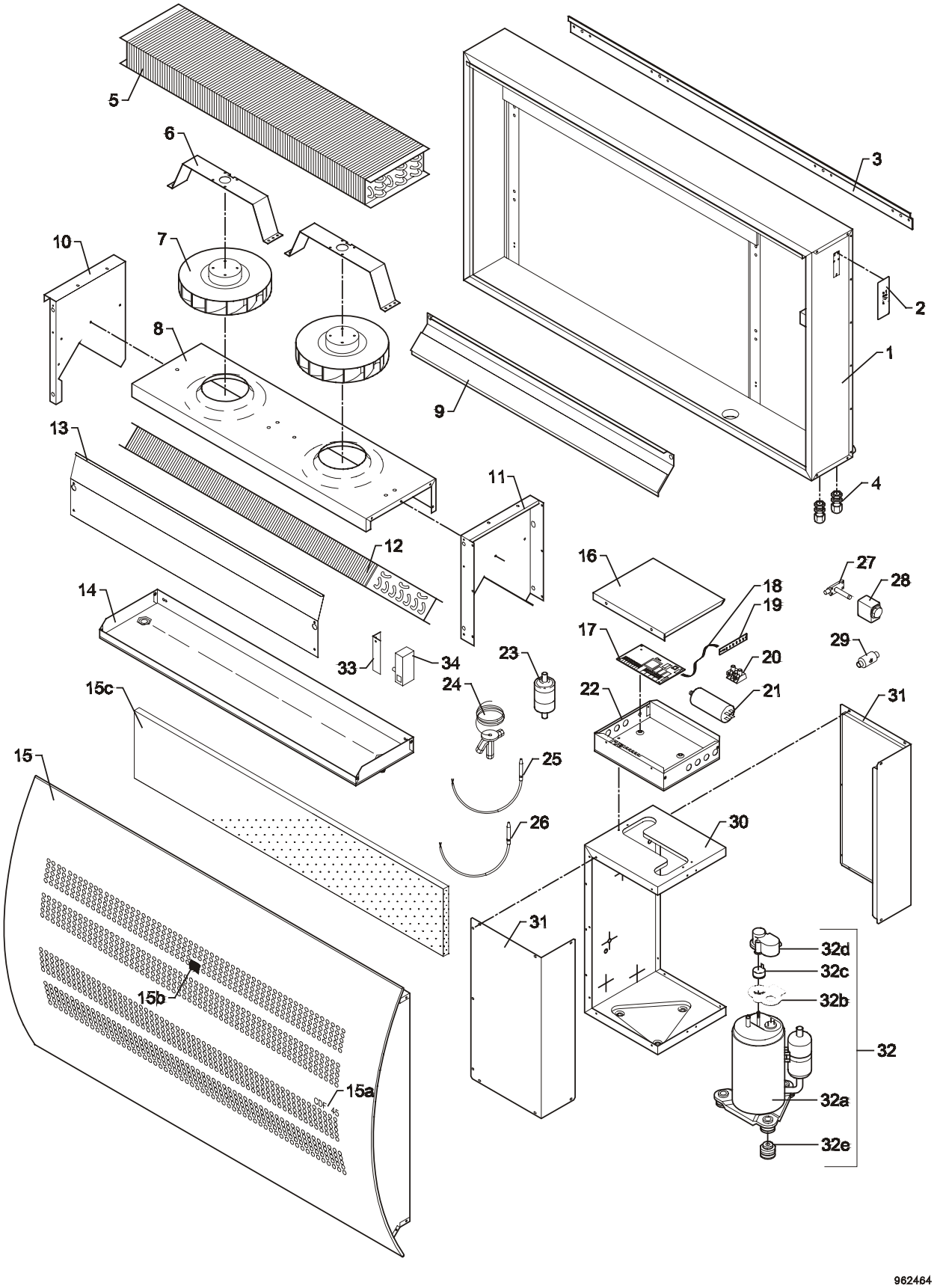
CDF 35 – 1x230V/50Hz



CDF 35 – 1x230V/50Hz

Pos.	Dantherm. No.	Beskrivelse	Designation	Beschreibung	Description
1	293661	Kabinet, kpl.	Housing complete	Gehäuse kpl.	Carrosserie cpl.
2	517598	Label for styrepanel	Label for operating panel	Aufkleber für Manövrier paneel	Etiquette pour panneau de manoeuvre
3	069985-046	Vægbeslag	Wall suspension rail	Wandbeschlag	Barre d'ancrage
4	526920	Kabelforskruning	Cable entry	Kabelverschraubung	Entrée de cable
5	600978	Kondensatorflade	Condenser	Kondensator	Condenseur
6	069931				
7	172591	Ventilator, 800mm ledning	Fan with 800 mm cable	Ventilator mit 800 mm Kabel	Ventilateur avec 800 mm de cable
8	069938				
9	293631				
10	069928				
11	069929				
12	600072	Fordamperflade	Evaporator	Verdampfer	Evaporateur
13	293632				
14	293626	Drypbakke	Condensate tray	Kondenswasserschale	Bac à eau condensée
15	293662	Front, kpl.	Front cover panel cpl.	Vorderplatte kpl.	Tôle avant cpl.
15a	528633	Skilt – CDP 35T	Label – CDP 35T	Aufkleber – CDP 35T	Etiquette – CDP 35T
15b	528117	Skilt –Dantherm logo	Label – Dantherm logo	Aufkleber – Dantherm logo	Etiquette – Dantherm logo
15c	069998	Filter	Filter	Filter	Filtre
16	069950				
17	517593	Printkort	PCB	Printplatte	Platine électronique
18	517596	Fladkabel for diodeprint	Flat cable for diode print	Flachkabel für Diodenplatine	Cable plat pour platine de diode
19	517594	Diodeprint	Diode print	Diodenprint	Platine de diode
20	524593	2 polet klemme	Bipolar terminal	Zweipolige Klemme	Borne bipolaire
21	602444	Driftkondensator	Capacitor	Betriebskondensator	Condenseur de service
22	293635				
23	607232	Væskebeholder/tørrefilter	Receiver/liquid line drier	Receiver/Trockenfilter	Collecteur/filtre anti-humidité
24	603969	Termoventil	Thermostatic valve	Thermoventil	Vanne thermique
25	517802	Føler, metalnæse, 1150mm	Sensor, metal nose, 1150 mm	Fühler, Metallnase, 1150 mm	Sonde, nez métallique, 1150 mm
26	517804	Føler, 1250mm	Sensor, 1250 mm	Fühler, 1250 mm	Sonde, 1250 mm
27	605470	Magnetventil	Solenoid valve	Magnetventil	Vanne solénoïde
28	605440	Spole for magnetventil	Coil for solenoid valve	Spule für Magnetventil	Bobine pour vanne solénoïde
29					
30	293627				
31	293621				
32	602447	Kompressor, kpl.	Compressor cpl.	Kompressor kpl.	Compresseur cpl.
32a	602448	Kompressor	Compressor	Kompressor	Compresseur
32b	602456	Pakning for dæksel	Seal	Dichtung	Joint d'étanchéité
32c	602451	Sikring	Fuse	Sicherung	Fusible
32d	602455	Dæksel	Cap	Deckel	Couverture
32e	602450	Svingningsdæmper	Vibration damper	Schwingungsdämpfer	Amortisseur
33	069967	Holder for hygrostat	Retainer for hygrostat	Halter für Hygrostat	Support de l'hygrostat
34	516350	Hygrostat	Hygrostat	Hygrostat	Hygrostat

CDF 45 – 1x230V/50Hz



CDF 45 – 1x230V/50Hz

Pos.	Dantherm. No.	Beskrivelse	Designation	Beschreibung	Description
1	293665	Kabinet, kpl.	Housing complete	Gehäuse kpl.	Carrosserie cpl.
2	517589	Label for styrepanel	Label for operating panel	Aufkleber für Manövrier paneel	Etiquette pour panneau de manoeuvre
3	069956-046	Vægbeslag	Wall suspension rail	Wandbeschlag	Barre d'ancrage
4	526920	Kabelforskruning	Cable entry	Kabelverschraubung	Entrée de cable
5	600972	Kondensatorflade	Condenser	Kondensator	Condenseur
6	069931				
7	172591	Ventilator, 800mm ledning	Fan with 800 mm cable	Ventilator mit 800 mm Kabel	Ventilateur avec 800 mm de cable
7	172592	Ventilator, 1200mm ledning	Fan with 1200 mm cable	Ventilator mit 1200 mm Kabel	Ventialteur avec 1200 mm de cable
8	069930				
9	293629				
10	069928				
11	069929				
12	600974	Fordamperflade	Evaporator	Verdampfer	Evaporateur
13	293664				
14	293618	Drypbakke	Condensate tray	Kondenswasserschale	Bac à eau condensée
15	293666	Front, kpl.	Front cover panel cpl.	Vorderplatte kpl.	Tôle avant cpl.
15a	528635	Skilt – CDP 35T	Label – CDP 35T	Aufkleber – CDP 35T	Etiquette – CDP 35T
15b	528117	Skilt –Dantherm logo	Label – Dantherm logo	Aufkleber – Dantherm logo	Etiquette – Dantherm logo
15c	069897	Filter	Filter	Filter	Filtre
16	069950				
17	517593	Printkort	PCB	Printplatte	Platine électronique
18	517596	Fladkabel for diodeprint	Flat cable for diode print	Flachkabel für Diodenplatine	Cable plat pour platine de diode
19	517594	Diodeprint	Diode print	Diodenprint	Platine de diode
20	524593	2 polet klemme	Bipolar terminal	Zweipolige Klemme	Borne bipolaire
21	602444	Driftkondensator	Capacitor	Betriebskondensator	Condenseur de service
22	293635				
23	607232	Væskebeholder/tørrefilter	Receiver/liquid line drier	Receiver/Trockenfilter	Collecteur/filtre anti-humidité
24	603965	Termoventil	Thermostatic valve	Thermoventil	Vanne thermique
25	517802	Føler, metalnæse, 1150mm	Sensor, metal nose, 1150 mm	Fühler, Metallnase, 1150 mm	Sonde, nez métallique, 1150 mm
26	517804	Føler, 1250mm	Sensor, 1250 mm	Fühler, 1250 mm	Sonde, 1250 mm
27	605470	Magnetventil	Solenoid valve	Magnetventil	Vanne solénoïde
28	605440	Spole for magnetventil	Coil for solenoid valve	Spule für Magnetventil	Bobine pour vanne solénoïde
29	604880	Kontraventil	Non-return valve	Rückschlagventil	Soupape de non-retour
30	293620				
31	293621				
32	602446	Kompressor, kpl.	Compressor cpl.	Kompressor kpl.	Compresseur cpl.
32a	602449	Kompressor	Compressor	Kompressor	Compresseur
32b	602456	Pakning for dæksel	Seal	Dichtung	Joint d'étanchéité
32c	602452	Sikring	Fuse	Sicherung	Fusible
32d	602455	Dæksel	Cap	Deckel	Couverture
32e	602450	Svingningsdæmper	Vibration damper	Schwingungsdämpfer	Amortisseur
33	069967	Holder for hygrostat	Retainer for hygrostat	Halter für Hygrostat	Support de l'hygrostat
34	516350	Hygrostat	Hygrostat	Hygrostat	Hygrostat

EU - Overensstemmelseserklæring

Dantherm
Environmental Air Management

A/S Dantherm
Jegstrupvej 4
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Tel. +45 97 52 41 44

erklærer på eget ansvar, at følgende produkter:

Luftaffugter type CDF 35 og CDF 45

som er omfattet af denne erklæring, er i overensstemmelse med følgende direktiver:

98/37/EEC	Maskindirektivet
73/23/EEC	Lavspændingsdirektivet
89/336/EEC	EMC direktivet

- og fremstillet i overensstemmelse med følgende normer

EN 60335-2-40	Standard for elektriske affugtere
EN 292:	Maskinsikkerhed
EN 61000:	EMC

Skive, 28/08 2003

Niels B. Pedersen
Projektleder

Per Albæk
Adm. direktør

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EC – Declaration of Conformity

Dantherm®
Environmental Air Management

A/S Dantherm
Jegstrupvej 4
DK-7800 Skive
Tel. +45 97 52 41 44

hereby declare that the units mentioned below:

Dehumidifiers type CDF 35 and CDF 45

are in conformity with the following directives:

98/37/EEC	Directive on the safety of machines
73/23/EEC	Low Voltage Directive
89/336/EEC	EMC Directive

- and are manufactured in conformity with the following standards:

EN 60335-2-40	Standard for electric dehumidifiers
EN 292:	Machine Safety
EN 61000:	EMC

Skive, 28/08 2003

Niels B. Pedersen
Project Manager

Per Albæk
Managing Director

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EG – Konformitätserklärung

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Environmental Air Management

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erklärt auf eigene Verantwortung, daß folgende Geräte:

Luftentfeuchter Typ CDF 35 und CDF 45

welche von dieser Erklärung betroffen sind, mit den folgenden Richtlinien übereinstimmen:

98/37/EEC	Maschinensicherheit
73/23/EEC	Niederspannungsrichtlinien
89/336/EEC	EMV-Richtlinien

- und in Übereinstimmung mit den folgenden Normen hergestellt sind:

EN 60335-2-40	Sicherheitsvorschriften für elektrische Geräte
EN 292:	Maschinensicherheit
EN 61000:	EMC

Skive, 28/08 2003

Niels B. Pedersen
Projektleiter

Per Albæk
Direktor

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Déclaration CE de conformité

Dantherm
Environmental Air Management

A/S Dantherm
Jegstrupvej 4
DK-7800 Skive
Tel. +45 97 52 41 44

déclare par la présente que les machines suivantes:

Déshumidificateurs type CDF 35 et CDF 45

ont été construites en conformité avec les directives suivantes:

98/37/EEC	Directives relatives aux machines
73/23/EEC	Directives relatives à la basse tension
89/336/EEC	Directive EMC

- et les normes suivantes:

EN 60335-2-40	Sécurité des appareils électriques
EN 292:	Sécurité des machines
EN 61000 :	EMC

Skive, 28/08 2003

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