

INSTALLATION AND INSTRUCTION MANUAL FOR COTES® CRT12000D DEHUMIDIFIER.

PRODUCTION NUMBER :

STOCK NUMBER: 14123E-10

VOLTAGE: 3x400V, 50Hz (3Ph+PE)

DOCUMENT NO.: T12000E-ECB-14123E-2 E

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17.10.2012

EU declaration of conformity

Cotes A/S
Industrivej 31A
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Declares at its own liability that the following models of Cotes adsorption dehumidifiers:

CR100, CR150, CR200, CR300, CR450, CR600, CR750, CR800T, CR900, CR1200, CR1200S, CR1400T, CR1500, CR2000, CR2500, CR2400T, CR3200T, CR3800T, CR5000T, CR7000TE, CR80B, CR80B-FC, CR110B, CR110BT, CR240B, CR240BT, CR240BS, CR150B, CR150BT, CR300B, CR300BT, CR180B, CR200B, CR200BT, CR400B, CR400BT, CR400BW, CR01LK, CR110LK, CR160LK, CR300LK, CR600LK, CR750LK, CR900LK, CR1200LK, CRP2000E/D/G, CRP4000E/D/G/V, CRP6000E7D/G, CRP8000E/D/G, CRP12000E/D/G, CRP18000E/D/G, CRP25000E/D/G, CRP30000E/D/C, CRP40000E/D/G, CRT3000E/D/G, CRT6000E/D/G/V, CRT9000E/D/G, CRT12000E/D/G, CRT18000E/D/G

are covered by this declaration complying with the following directives:

Machinery Directive 2006/42/EC
Low Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC

and are manufactured in compliance with the following harmonised standards:

EN12100-1:2003

Safety of machinery – basic concepts, general principles for design
Part 1: Basic terminology, methodology

EN12100-2:2003

Safety of machinery – basic concepts, general principles for design
Part 2: Technical principles and specifications

EN 60204-1:2006

Safety of machinery – electrical equipment
Part 1: General requirements

EN 61000-6-4:2001

Electromagnetic compatibility (EMC) – Part 6-4: Generic standards - Emission standard for industrial environments

EN 61000-6-2:2005

Electromagnetic compatibility (EMC) – Part 6-2: Generic standards - Immunity for industrial environments

DK-Skaelskoer 01.01.2012


Søren Olesen

1. PRINCIPLE OF OPERATION.

The dehumidifier removes water from an airflow through, and the removed water is carried away from the dehumidifier with the regeneration air (henceforward called reg.-air). Water adsorption and -extraction takes place in an rotor made of water resistant silica gel.

The air flows in the dehumidifier divides the rotor in two parts : drying part and regeneration part (reg.-part).

Two separate air flows goes through the rotor as this:

- the process air (moist air inlet) passes through the drying part, and leaves the dehumidifier as dry air
- the reg.air is normally fresh air (ambient air) entering the dehumidifier through the reg.air inlet filter. In the heater box the air is heated to 100-120°C. From the heater the air enter the reg.section of the rotor - the adsorbed water is released and carried away from the dehumidifier with the "wet air".

The two air flows are fixed and the rotor turns - this gives an automatic process of simultaneous water adsorption and water extraction.

CAPACITY DIAGRAM D00003:

The inlet conditions of the air to be dried, determines how much water the dehumidifier will remove.

On page 9 the capacity diagram shows how much water will be removed per kg air going through.

Example:

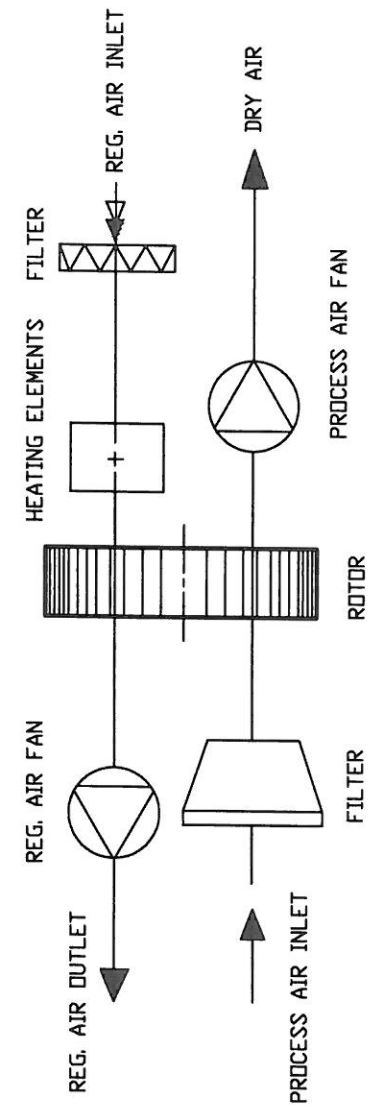
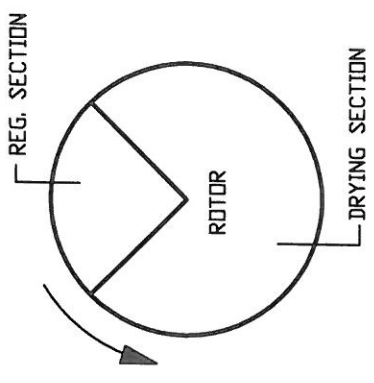
- inlet air conditions 20°C, 50 %RH, gives water content = 7,3 g/kg
- the diagram shows then dry air condition of X = 2,9 g/kg
- removed per kg air is then: 7,3 - 2,9 = 4,4 g/kg

Capacity CRP12000 at this condition (standard unit):

Dry air flow is nominal 12000 m³/h= (12000x 1,2) = 14400 kg/h
Capacity, removed water per hour 14400 x 4,4 = 63360 g/h
= 1520 kg/24h

- at 400V.

The temperature of the dry air is higher than for the inlet air. This is caused by the evaporation heat release and heat gain from the rotor. The temperature is shown to be 42°C.



Titel: PRINCIPLE OF OPERATION, CRP .../CRT...ELECTRIC

Vare nr.:	
Dato:	Rettelse:
X	X
Målestok 1:1	
Dato:	05.12.03
Tegn. nr. M00014	

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2. APPLICATIONS.

Dehumidifiers in the CRP range is used for dehumidification of ambient air at normal atmospheric pressure. This can be an installation for moisture control in an unheated store room, in a water work building, production room for hygroscopic materials... - with the dehumidifier in a separate installation.

The dehumidifier also can be used as a part of a bigger air treatment system. Here the dehumidifier could be placed in a by-pass to the main system.

In this case the pressure in the main system will influence the dehumidifier - and your supplier must be contacted, as this can influence the capacity of the dehumidifier.

Normally the dehumidifier will be placed on the floor with the back side against a wall. In this way the necessary free space for service is made.

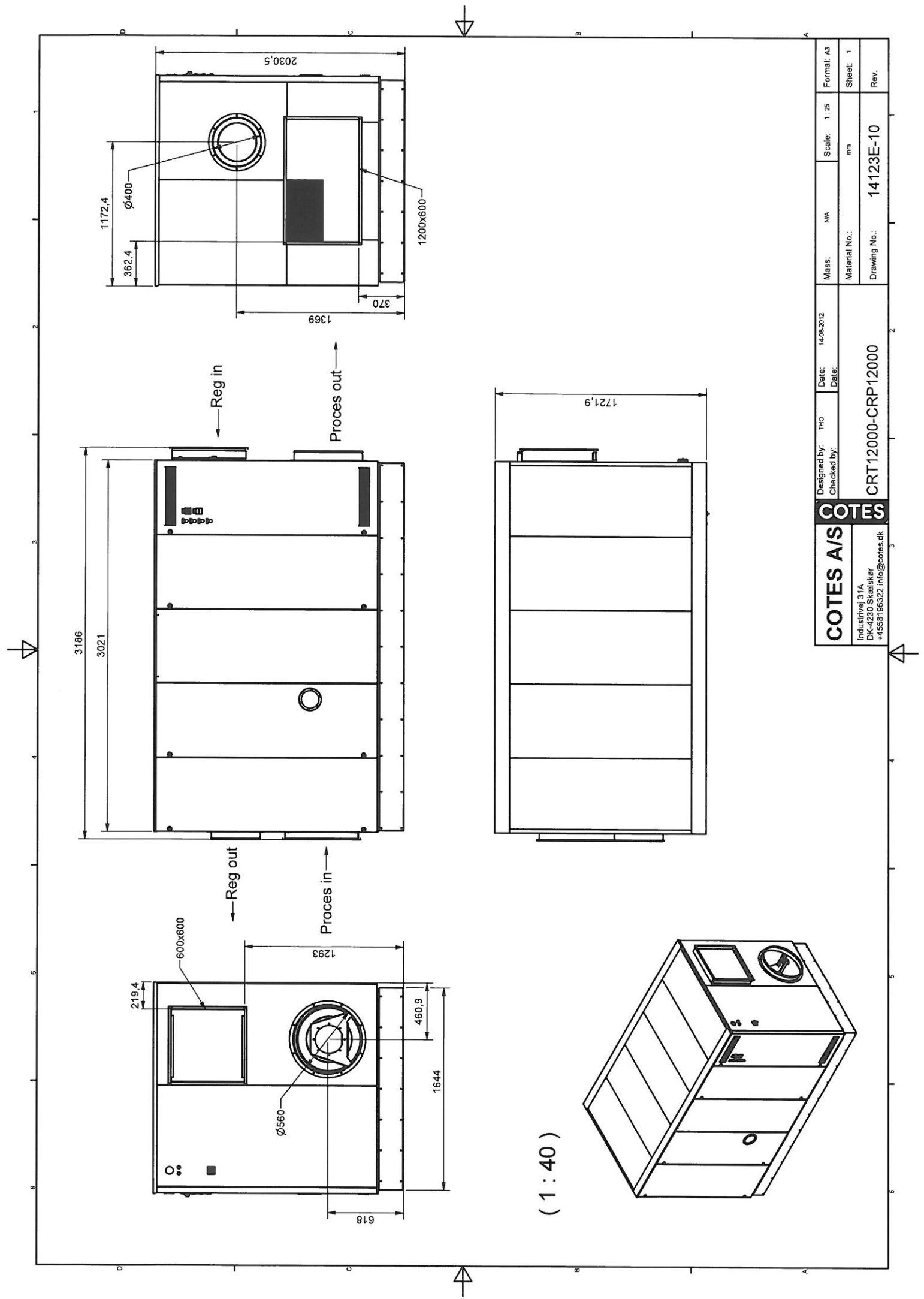
The air to the dehumidifier should be free from solvents or other explosive components, and should be free from pollution from solid particles, chemical substances (ex. acids, bases...), oil vapours, exhaust gases from diesel engines.

For air to the dehumidifier the following limit values must be respected:

- max. humidity 100 %RH
- max. Temperature 35°C
- max./min. pressure ambient +/- 500Pa

The CRP and CRT range is for indoor, stationary installations.

Should not be placed in rooms with possibility for free water on the cabinet.



COTES A/S Industivei 31A DK-4230 Skælskør +4556196322; info@cotes.dk	Designed by: Tho	Date: 14.09.2012	Mass: N/A	Scale: 1:25	Format: A3
	Checked by:	Date:		mm	Sheet: 1
CRT12000-CRP12000			Drawing No.: 14123E-10		Rev.

4. TECHNICAL DATA CRT12000D

Dehumidifier data:

Process air flow, max. : 12000 m3/h
Process air flow, nominal..... : 12000 m3/h
Reg.air flow, nominal : 2600 m3/h
Capacity at 20°C, 50% RH, 7,3 g/kg inlet: 64 kg/h
(at dry air flow 12000 m3/h)

Steam heater:

Make/Type:
Face area: LxH = 600x600 mm. W=160 mm
Power consumption nom at 20°C inlet..... : 84 kW
Steam condition: dry, saturated,..... : 5 Barg
Steam consumption max at 10°C inlet..... : 145 kg/h
Steam temperature : 159 °C
Air pressure drop : 75 Pa
Regeneration temperature : 120 °C *)
*) at 25C inlet.

Process air fan:

Make Ziehl-Abegg ER50C-ZID.GL.CR, 400V/50Hz.
Direct driven
Static pressure : 900 Pa
External pressure : 300 Pa
Motor type : ECBlue
Motor for fan at 400V .C)..... : 5,3 KW
Power consumption, motor (nominal) ... : 5,0 KW
Motor speed : 2126 r/min.
Fan speed : 2130 r/min. *)
***) Adjustable on the potentiometer 100R3 in the E-Box**

Reg.air fan:

Make Parlock, type MRQ35, 400V/50Hz
Direct driven : 801564
Total pressure, reg.air fan *)..... : 1500 Pa
External pressure, reg.air fan : 400 Pa
Motor at 400V : 2,2 KW, 400V/50
Motor speed : 2890 r/min.
Fan weight : 51 kg
*) at 2600 m3/h at 20°C

Gearmotor for rotor:

Gear Nordgear i= 600..... : 110470
Motor..... : 0,12 KW, 0,54A
Drivebelt, 2 pcs..... : 40-T10 B=25 L=4600(132296)
Pulley : 40-T10 B=25 Z=26 (120336)

Air inlet filters.

Process air filter: 130256 Filterbags 287x287x380, EU6, 5 Stück
130271 filterbags 287x490x380, EU6, 5 Stück

Reg.-Air filter : 130221 Am-Air Kassettenfilter 595x595x48,
EU4, 1 Stück

Filter for e-box fan : 111787

ELECTRIC DATA:

Process air fan : 5,3 KW 400V
Reg.air fan : 1,1 KW 400V
Gear motor : 0,12 KW 400V
Power consumption, total : 6,5 KW/13A 400V
External fuses : 20 A (melting fuse)
Voltage : 400V/50 3ph+PE

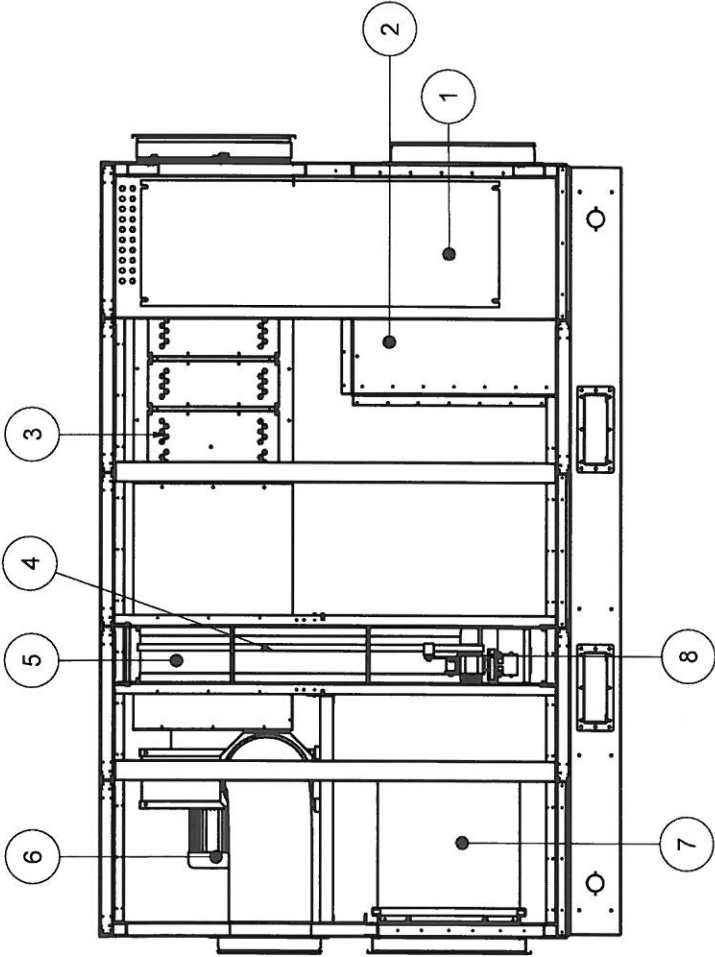
ROTOR:

Rotor, Ø1250/200 mm : 124214
Rotations of rotor : 9 rph

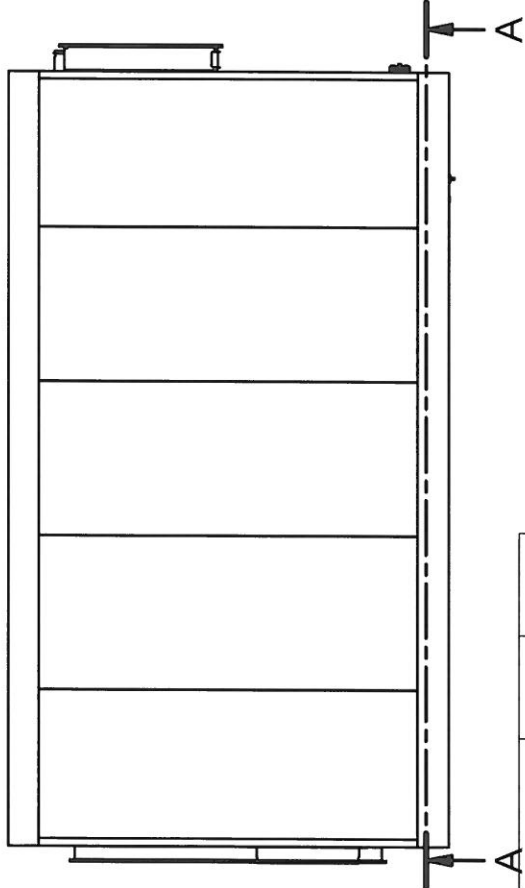
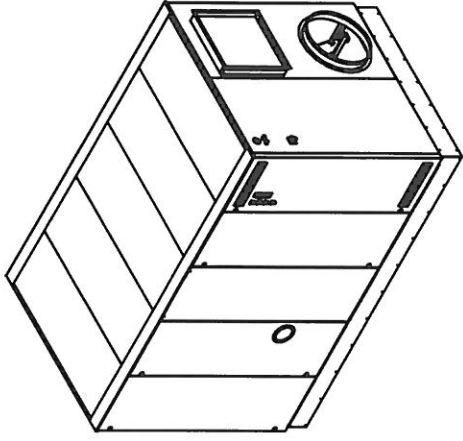
DIMENSIONS, WEIGHT.

L x W x H : 3021x1722x2030mm
Weight : 1300 kg

VIEW A



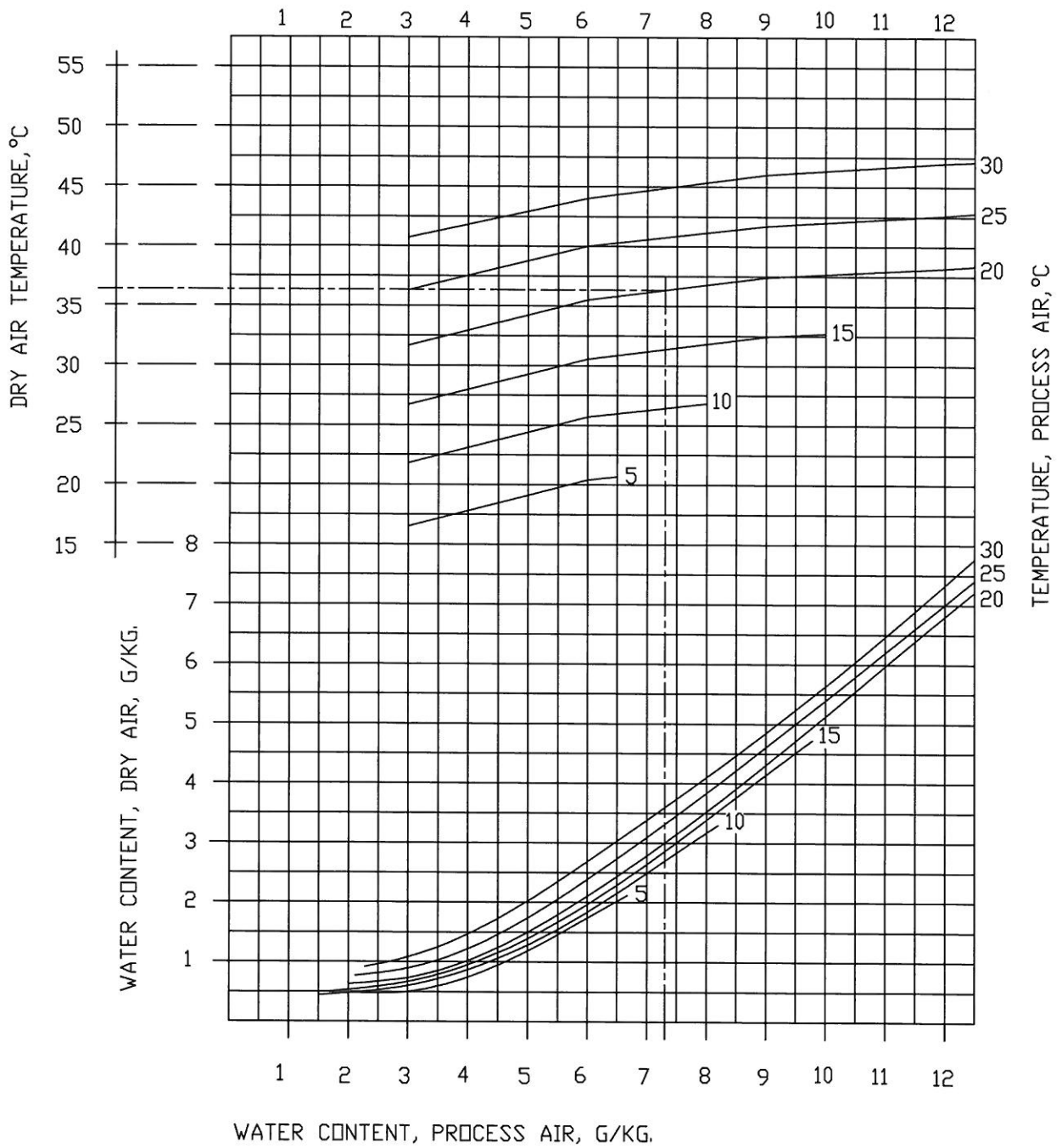
(1 : 40)



8	1	110470	Nord Gear compl. 0.12 kW 600:1
7	2	130249	Pocket filter 490x592x380 F6
6	1	801582	Fan MRQS35 LG270 2.2kW
5	1	124214	Rotor PPS ø1250/200
4	2	132518	Toothed belt B=25 L=4465mm
3	1		Steam heater
2	1	801628	Fan ER50C-ZID.GL.CR
1	1	110667	Electric cabinet

Item	Qty.	Part number	Description	Mass
Designed by: THO			Date: 14-08-2012	Format: A3
Checked by:			Date:	Scale: 1:20
COTES A/S			Material No.:	Sheet: 2
Industivej 31A			Drawing No.:	Rev.
DK-4230 Skælskør				
+4556196322 info@cotes.dk				
CRT12000D-CRP12000D				
				14123E-10

Rev	Zone	Description	Date	Approved



Titel: CAPACITY DIAGRAM CRT3000, CRT6000, CRT9000, CRT12000, CRT15000, CRT22500 STEAM / GAS			
Cotes A/S Industrivej 31A DK-4230 Skælskør	Dato:	Rettelse:	Vare nr.:
	X	X	Målestok
			Dato: 01.11.00
			Tegn. nr.: D00004

7.0 Register of electric components/Diagrams CRT12000D

Refers to el-diagrams:E14123D-2 from page 18.

7.1 Indicator neon, HL1, HL2

HL1 (green) indicates power supply, and should always be illuminated when the dehumidifier is operating.

If the dehumidifier is not operating when HL1 is illuminated the connected hygrostat might have broken (humidity OK).

HL2 (red) indicates thermal overload. HL2 should never be illuminated when the dehumidifier is operating.

Thermal switch-off can be one of the following reasons:

- Overload relays for fans: 101F1, 102F1.

7.2 Regulation by a hygrostat.

The dehumidifier is prepared for external regulation by a hygrostat.

Therefore terminals for this connection is placed into the E-box.

The terminals are 200X6,1-2.

If an electronic hygrostat is used, the power supply can be connected the terminals 200X6,3-4 = 230V, internal fused with 2A.

The terminals 200X6,1-2 are shunted at delivery. This shunt is to be removed and the terminals for the hygrostat connected.

NB: when a connected hygrostat breaks, the reg.-air fan will continue operating for further 5 minutes for cooling the electric heater, and for finishing the reg.-process.
(controlled by ST3).

7.3 Electric connection, CRT12000D

The dehumidifier is connected 400V/50, 3Ph+PE. Connection to the main circuit breaker QS1 - placed in the E-box in the front of the dehumidifier. For connection of an external electronic hygrostat for 230V power supply, See 7.2 above.

Power consumption is 6,5 KW - external fuses 20A - melting fuses.

The controller for the electric heater and the selector switch are placed in the cover of the E-box.

Further connections:

Terminals 200X6,1-2 : Connection for external hygrostat (on/off)

Terminals 200X6,3-4 : Connection for external hygrostat, 230V supply

Terminals 202X5,1-2 : Connection for external fault indication

Terminals 202X6,1-2 : Connection for external operation indication

Terminals 202X2,1-2-3: Connection for external steam valve, 24 VAC

7.4 Electronic controller with display, BT1

The electronic controller is placed under the cover of the E-box.
BT1 control and indicate the reg.-air temperature and the set point.

Output for actuator for steam valve 0-10V.

The function of the thermostat is:

Connected to the steam valve actuator it will control and maintain a
Reg-air temperature of 120C (at inlet 25C).

An on/off hygrostat then to be connected 200X6,1-2.

The steam valve actuator can also be controlled by an external humidity
Controller 0-10V - as a Capacity Control.

Terminals 200X6,1-2 to be shunted (no hygrostat connection).

8. INSTALLATION.

The dehumidifier should be installed indoor, placed on the floor or some other horizontal basis. The backside can be placed against the wall, the remaining three sides of the cabinet should be surrounded by a free area of 1m for service. For some installations shock absorbers should be placed under the cabinet.

CONNECTION OF DUCTS :

8.1 **Reg.air inlet** is 600x600 placed on the top of the dehumidifier cabinet. Duct connection to the filter frame.

Reg.-air outlet should be made draining against the outlet, to allow condensate to run free. If this is not possible, drill an Ø8 hole on the lowest part of the duct for drain.

Damper for adjusting the reg.-air flow must be installed.

Dimension of the ducting is DN400 mm.

8.2 **Dry air outlet** connection is DN560 mm.

The ductwork for the dry air should be selected with regard to the available external pressure from the process air fan, and to the available space for ducting.

Select ducting ex. DN800 mm.

8.3 If ducts are needed for inlet process air, the connection is 600x1000mm.

NB : If the dehumidifier should be connected another air treatment system, the air pressure of this system will influence the dehumidifier. You should then contact your supplier before installation for advice.

Steam connection.

Steam and drain connection is 1 1/2" pipe with flange.

We recommend that the steam inlet is fitted with a valve and actuator for closing the steam flow when the dehumidifier is not operating.

Steam must be 5 Barg, dry, saturated.

9. COMMISSIONING CRT12000D

IMPORTANT:

Measuring of voltage and other work in the E-box of the dehumidifier must be performed by people educated as electricians.

When the cover of the E-box is open, (ex. for operating the MCB by hand as described below) the power supply must be switched off at the internal safety switch and at the external main switch. The main switch must be switched off too when covers marked with the yellow triangle and flash are open.

a) Checking the electric installation before starting the dehumidifier, by switching the safety switch and the selector switch

(all automatic switches switched off)

- Check the voltage between the terminals L1,L2,L3 (= 400V).
- Is the ground cable connected, and in the right dimension?
- Is the hygrostat (if needed) correctly connected?

b) Checking the connected duct system.

- Is the recommended damper installed in the reg.air outlet duct?
- Is the reg.air outlet ducts installed draining away from the dehumidifier - to allow condensed water to leave the duct?

c) Suggested damper positions at commissioning – and Potentiometer position.

Adjust the following positions of the dampers:

- Damper in the reg.air outlet : fully open.
- Potentiometer (in the E-box) for the process air fan, set for 70% of max.

d) Start up the dehumidifier by switching the MCB.

30F1,42F1,42F3,101F1,102F1 and the Safety switch QS1 to be switched on.

Set the selector switch SA1 (pos. "MAN" for continuous operation, pos. "AUTO" for automatic operation by means of a hygrostat).

When the selector switch is switched on, the process air fan, reg.air fan, gear motor/rotor will be operating.

Steam valve will open according to actual input 0-10V

e) If the dehumidifier start-up as described above, then go to f).

If the dehumidifier does not start, it could have the following reasons:

- Phase rupture/phase sequence relay 102K3 has one pilot lamp.
- The pilot lamp alight indicates that the phase sequence is ok.
- The pilot lamp flashing indicates an incorrect phase sequence.
- At start-up it might often happen that the pilot lamp flashes and as a consequence the dehumidifier does not start-up.
- Two cables in the power supply to the dehumidifier should then be exchanged.
- Switch off the external main breaker and exchange two of the phases (e.g. cables for L1 and L2).
- Switch on the external main breaker, and the pilot lamp of P2 should alight and the dehumidifier should start up.
- Alternatively, it might be that the external hygrostat has broken (the selector switch in pos. "AUTO"). Adjust the hygrostat to a low value, e.g. 20 %RH, and the dehumidifier should start up.
- Phase rupture/phase sequence relay 102K3 has two neon's, a green one and a yellow one. The green neon alight indicates that the necessary 3 phases to the dehumidifier are active.

- The yellow neon alight indicates a correct phase sequence. Consequently, both neon's must be alight in order for relay 102K3 to pull.
- At start-up it might often happen that the yellow neon does not light up, and as a consequence the dehumidifier does not start, a fact which indicates an incorrect phase sequence.
- Two cables in the power supply to the dehumidifier should be exchanged.
- Alternatively, it might be that the external hygrostat has broken (the selector switch in pos. "AUTO"). Adjust the hygrostat to a low value, e.g. 20 %RH, and the dehumidifier should start up.

f) Now the dehumidifier is operating and the air flows should be adjusted.

- Adjust the process air flow for the nominal 12000 m³/h using a suitable instrument (Pitot pipe/thermo anemometer or similar) - and adjusting the potentiometer 100R3.
- Adjust the reg.air flow on the damper to the nominal 2600 m³/h.

With the electrical settings and air flows adjusted, the dehumidifier will then operate automatically by means of the internal control- and safety functions - controlled by an external hygrostat.

10. MAINTENANCE.

Dehumidifier CRT12000D only needs a minimum of maintenance.

All components are service free, which means no lubrication or adjustment (except for process air fan drive belts).

The maintenance work is limited to the following:

Each month:

- Check, or replace the filter for the fan for cooling air to the E-Box.
- Check the filters for process air and for reg.air and replace if necessary
- Check that the rotor is rotating during operation of the dehumidifier (looking through the inspection window in the cabinet cover).
- Check the 3 neons, HL1, HL2. The green neon must be illuminated during operation (HL1),
- The red one must not be illuminated (HL2).
- Check the thermostat BT1, the display should indicate a reg.air temperature of 120°C at 25°C inlet temperature..
- Check that the fans are operating (also the cooling fan for the E-box).

Once a year:

Further to the work of each month, we will recommend the following checks:

- Check the wear on the rotor gaskets, especially the gasket placed on the circumference of the rotor. The red side of the gasket is Teflon, and this must be intact all over the surface.
- Check the tension of the process air fan drive belts and adjust if necessary.
- Check/repair evtl. inside cabinet corrosion.
- Check the drive belts for the rotor.
- Check the internal flexible hoses.
- Check that the insulation of cables are intact, no mechanical or heat damages.
- Check that the insulation on the electric heaters are intact.
- Check in the E-box that all cables are well fixed, all MCB`s are switched on, all components are intact.
- Make a test of the functions of all electric components, ex. by following "9. commissioning CRT12000D"
- Check the fans according to the enclosed manual.

11. TROUBLE SHOOTING.

- 11.1 If the green neon is not illuminated, electricity supply could be cut-off to the dehumidifier. Check the external fuses for the dehumidifier, and check the position of the selector switch and the safety switch.
Check 30F1, 42F1, 42F3 (MCB).
It could also indicate a defective neon.
- 11.2 If the dehumidifier is not operating even if the green neon is on, it is probably the external hygrostat which has broken.
This is a normal situation when the desired humidity is obtained.
To check: adjust the hygrostat for 20 %RH, and the dehumidifier should start-up.
(only when selector switch is in pos. "AUTO").
Adjust again for desired humidity.
- 11.3 If the red neon HL2 is on, one or more of the thermal relays has switched off: 101F1, 102F1.
The motor protection switches can be reset on the component itself, after opening the E-box.
- 11.4 All electric components are protected by a fuse breaker and could be switched-off at overload or by a short-circuit.
- 11.5 If the desired humidity is not obtained, the problem can be the dehumidifier - or the other parts in the total installation (room tightness, hygrostat...).

To verify this, check:

- Rotation of rotor?
- Reg.-temperature =100-120°C?

If the rotor does not turn during operation, the gear motor probably is stopped, or the drive belt has broken.

12. SERVICE/REPAIR.

12.1 SAFETY INSTRUCTION.

Before opening the dehumidifier, make sure that the electric power is switched off on the main switch.

Further the safety switch QS1 should be switched off.

12.2 ACCESS FOR SERVICE.

- All electric components (contactors, fuse breakers, overload relays) are placed in the E-box behind the cover in the front side, and are available for service/replacement when the cover is opened.
- Remaining electric components (fan motors, gear motor, heating elements, ST3) are available when the cabinet covers for the parts are opened.

12.3 400V MOTORS IN GENERAL.

If a motor has been electric disconnected, the direction of rotation should be checked after re-connection, and two of the cables should be exchanged if direction is wrong.

12.4 REPLACING OF GEARMOTOR.

The drive belt should be removed from the pulley, and after electric disconnection the gear motor can be removed and exchanged.

Check the direction of the rotor : looking from the outside on the surface of the rotor, it must move upwards.

12.5 REPLACING OF STEAM COIL.

The steam coil is placed inside the cabinet, in the internal reg-air duct from inlet to the rotor.

The coil must be supported underneath to compensate for the weight During the separating from the duct.

12.6 REPLACING OF ROTOR, ROTORGASKETS AND SHAFT.

- Open the cabinet cover for the rotor section, the process air section and the process air filter section.
- Remove the drive belt from the pulley.
- Remove the two rotor gaskets (on the round surface).
- Loosen the two u-shackles for the shaft for the rotor.
- Raise the rotor 5mm by supporting it underneath.
- Pull the rotor shaft out of the rotor.
- Now the rotor can be removed from the cabinet.

When replacing the gaskets the rotor do not need to be removed. The new gasket is placed on the rotor and slightly fixed with the 3-parted expansion ring. The rotor is then turned and the gasket pressed against the departing plates until only half of the gasket is on the rotor. The expansion ring then fasten.

13. HANDLING.

The dehumidifier can be handled (moved, lifted)

- With forklift elevated in the middle of the bottom frame - when the forklift is long enough to support the entire bottom frame.

The weight is 1200kg.

14. SOUND LEVEL.

The sound level is measured according to EN292-2:

The dehumidifier is during the measuring of the sound level placed on the floor.

Ducts for reg.air outlet and for process air outlet are Installed and lead out of the room.

The sound level is then measured 1m outside the front of the cabinet (outside the big cabinet cover), and 1,6m above the floor.

The sound level is : 68 dB(A) .

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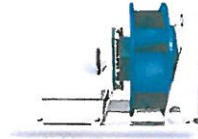


fan data

04.10.2012

version 1.01 (802) / 1.12.7.1 | 51389 (user ZAFS41389)

①



type
article no.

ER50C-ZID GL.CR
114733/A01

technical data

motor		ECblue
mains supply	-	3~ 400V 50Hz
ambient temperature, max. limit (t _a)	°C	40

fan data

ErP-conformity		2015
SFP		4
SFP-value (P _{SFP})	Ws/m ³	1528
airflow volume (q _v)	m ³ /h	12000
pressure, stat. (p _{sF})	Pa	900
pressure, tot. (p _F)	Pa	1010
electrical power input (P _{sys})	W	4924
system eff., tot. (η _{F,sys})	%	68.3
system eff., stat. (η _{sF,sys})	%	60.9
fan speed (n)	1/min	2126
fan speed, max. (n _{max})	1/min	2130
fan speed, set value (%n _{set})	%	100
voltage (U _{DP})	V	400
current (I _{DP})	A	7.49
acoustics (L _{w(A),5})	dB	86
dimensions (w x h x d)	mm	630 x 650 x 598
product weight (m _{pr})	kg	49
k-factor nozzle pres. (k)	-	252
differential pres. nozzle (p _{sF nozzle})	Pa	2268
guard grille incl.	-	no

nominal values

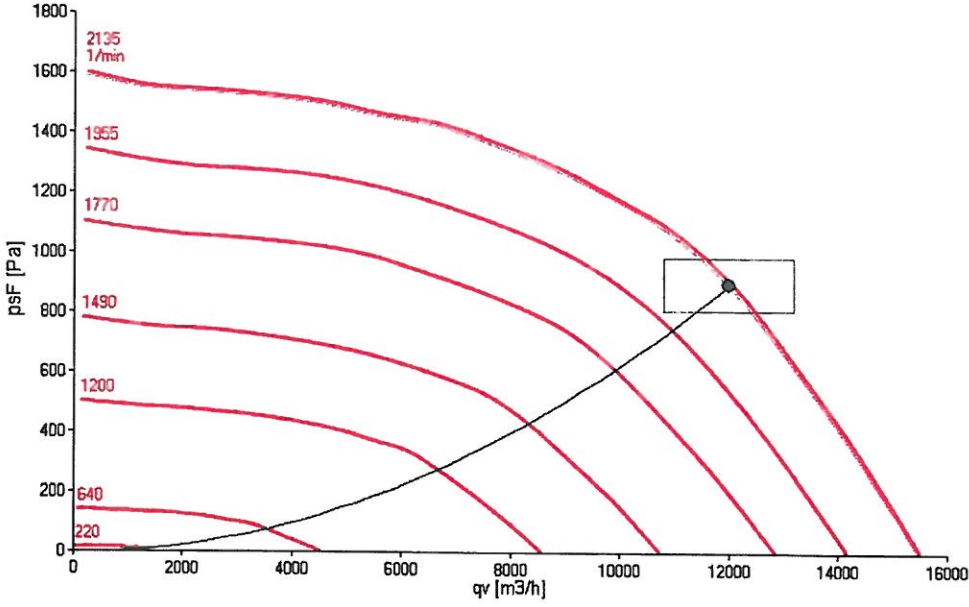
3~ 380-480V 50Hz P1 5.30kW
8.50-6.70A 2130/MIN 40°C
3~ 380-480V 60Hz P1 5.30kW
8.50-6.70A 2130/MIN 40°C
IP54 THCL155



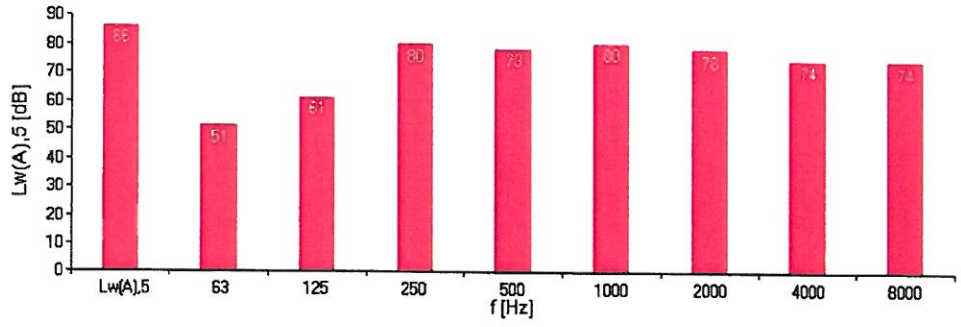
performance curve / acoustics 04.10.2012
version 1.01 (802) / 1.12.7.1 | 51389 (user ZAFS41389)

type **ER50C-ZID.GL.CR** article no. 114733/A01

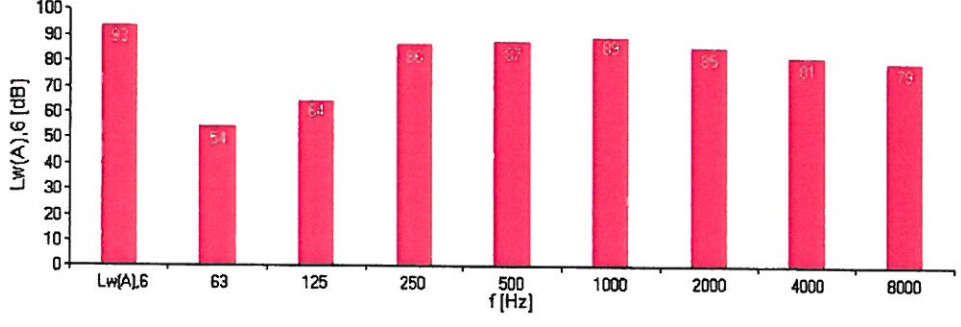
air performance p_{sF} | measurement density 1.16 [kg/m³]
measured in standard nozzle in installation typ A according to ISO 5801



acoustics ($L_{w(A),5}$)



acoustics ($L_{w(A),6}$)



[watch list](#) [options](#) [help](#) [logout](#)



FANselect

[product range](#) [fan selection](#) [details](#) [system components](#) [output](#)

type
[-]
EHS CC ZID GL CR

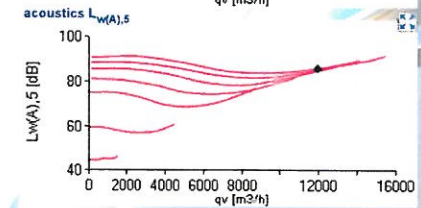
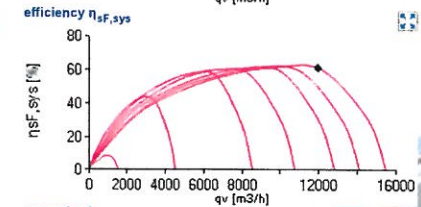
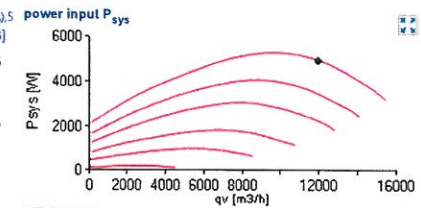
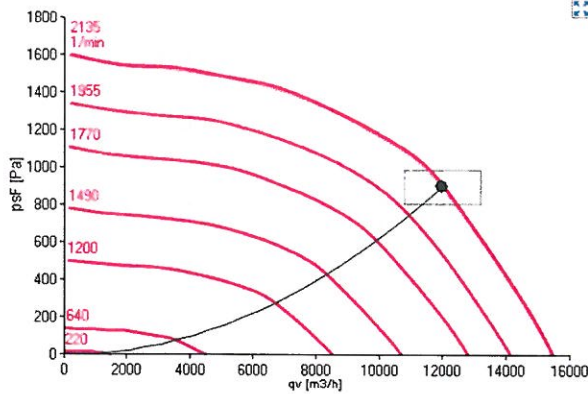
q_v	P_{sF}	P_F	SFP	P_{SFP}	P_{sys}	$\eta_{sF,sys}$	$\eta_{F,sys}$	n	$L_{w,5}$	$L_{w(A),5}$
m ³ /h	Pa	Pa	[-]	[W/m ³]	W	[%]	[%]	[1/min]	[dB]	[dB]
12000	900	1010	4	1528	4924	60.9	68.3	2126	90	86

air performance | measurement density 1.16 [kg/m³]
measured in standard nozzle in installation typ A according to ISO 5801

q_v	P_{sF}
m ³ /h	Pa
12000	900

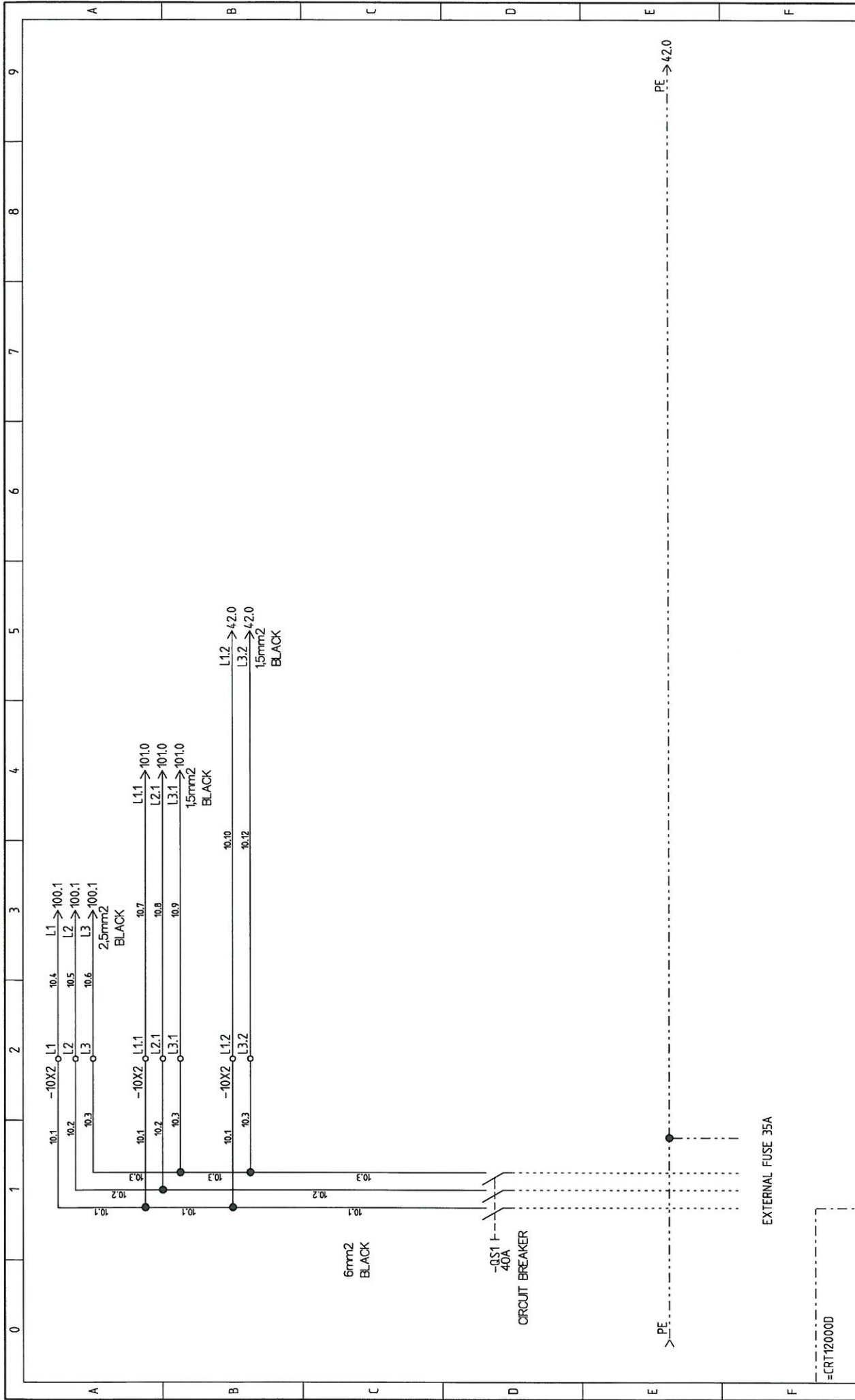
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- [Life-Cycle-Costs](#)
- [drawing](#)
- [nominal values](#)
- [SFP class](#)

[reset](#)



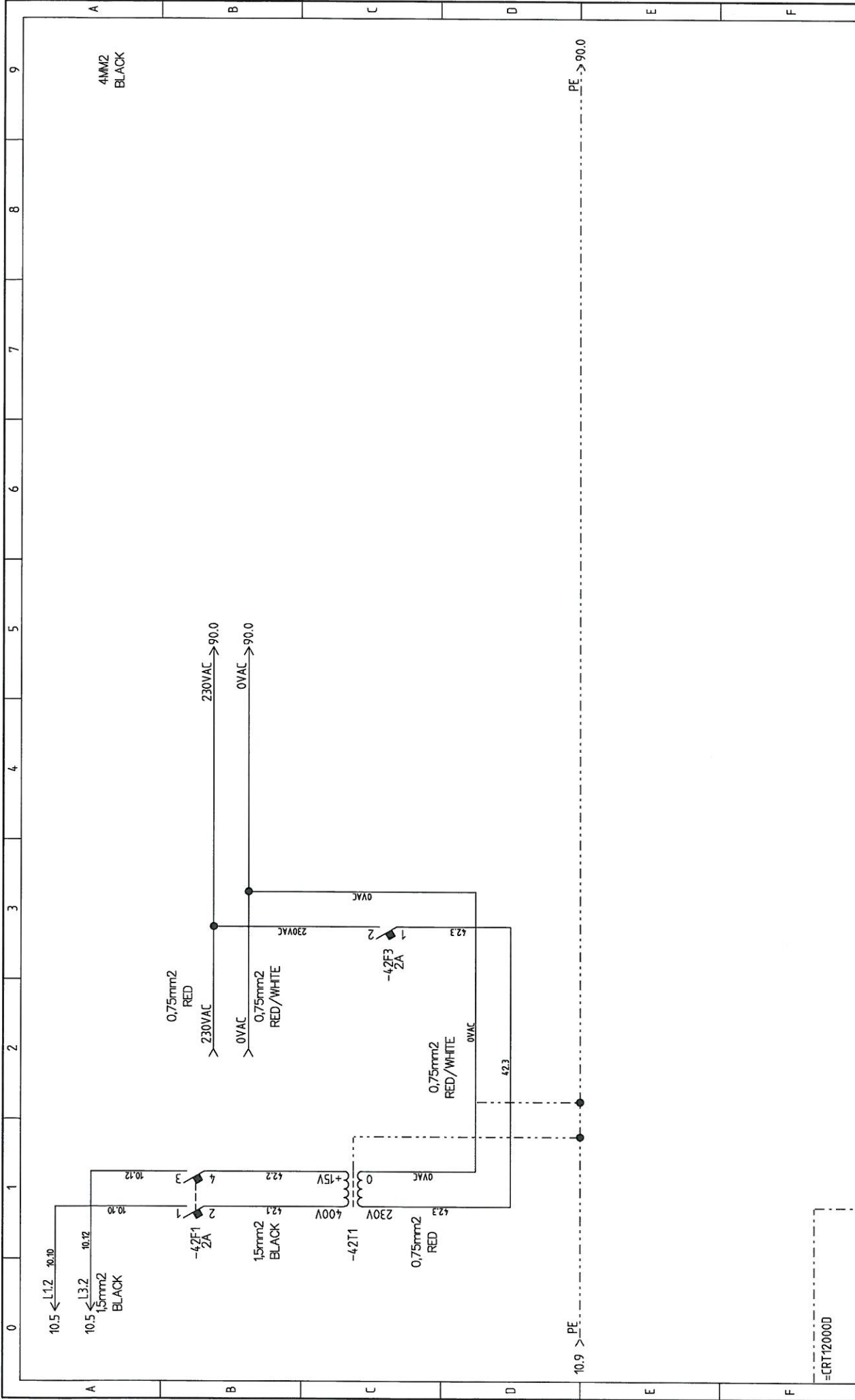
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0	1	2	3	4	5	6	7	8	9		
A	B	C	D	E	F						
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p>MODEL: CRT12000D ECB</p> <p>PROJECT NR: E14123D-2</p> <p>SECTION: ELECTRICAL BOX</p> <p>VOLTAGE: 3X400 V 50Hz 3PH+PE</p> <p>SYSTEM GROUND: TT SYSTEM</p> <p>FUSE: MAX 35A</p> <p>IKmax: 6 kA</p> <p>IKmin: 1 kA</p> </div>											
<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;"> <p>PLATE</p> </div>											
<p>COTES A/S Industrivej 31A DK 4230 Skælskøer</p>											
<p>COTES +4558196322</p>											
Project E14123D-2 CRT12000D ECB						Initials SD/TM		DCC		Pages 10	
Date 29-10-2012						Audit		Next page F-CRT12000D/10		Page 1	
						Document					

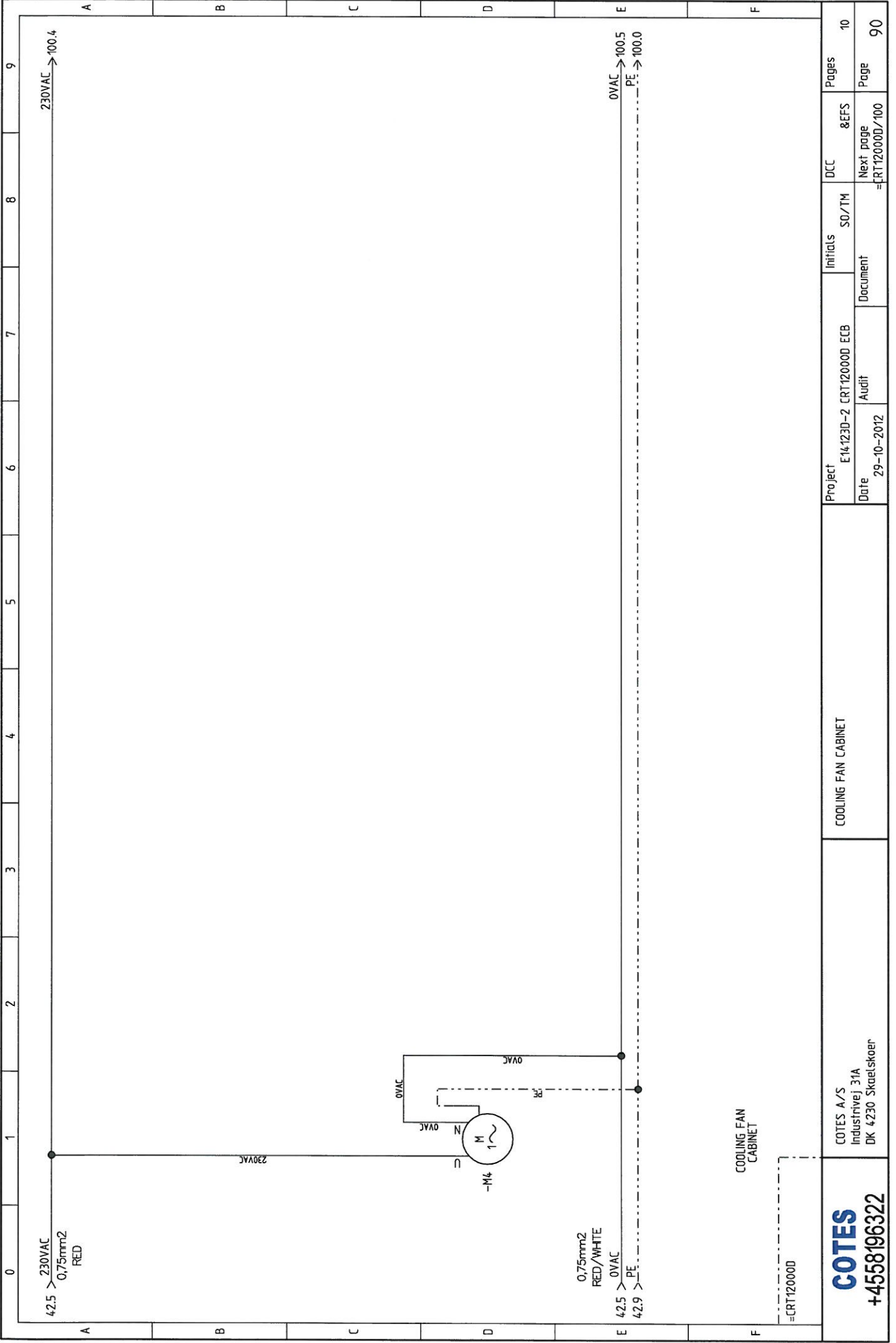


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				Date 29-10-2012		Document Audit		Next page CRT12000D/42		Page 10	

=CRT12000D



COTES +4558196322	COTES A/S Industrivej 31A DK 4230 Skælskøer	CONTROL CIRCUIT, POWER 400V / 230V		Project E14-1230-2 CRT12000D ECB		Initials SD/TM		DCC &EFS		Pages 10	
		=CRT12000D		Date 29-10-2012		Audit		Next page CRT12000D/90		Page 42	



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Industrivej 31A
DK 4230 Skælskøer

COOLING FAN CABINET

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E14-123D-2 CRT120000 ECB

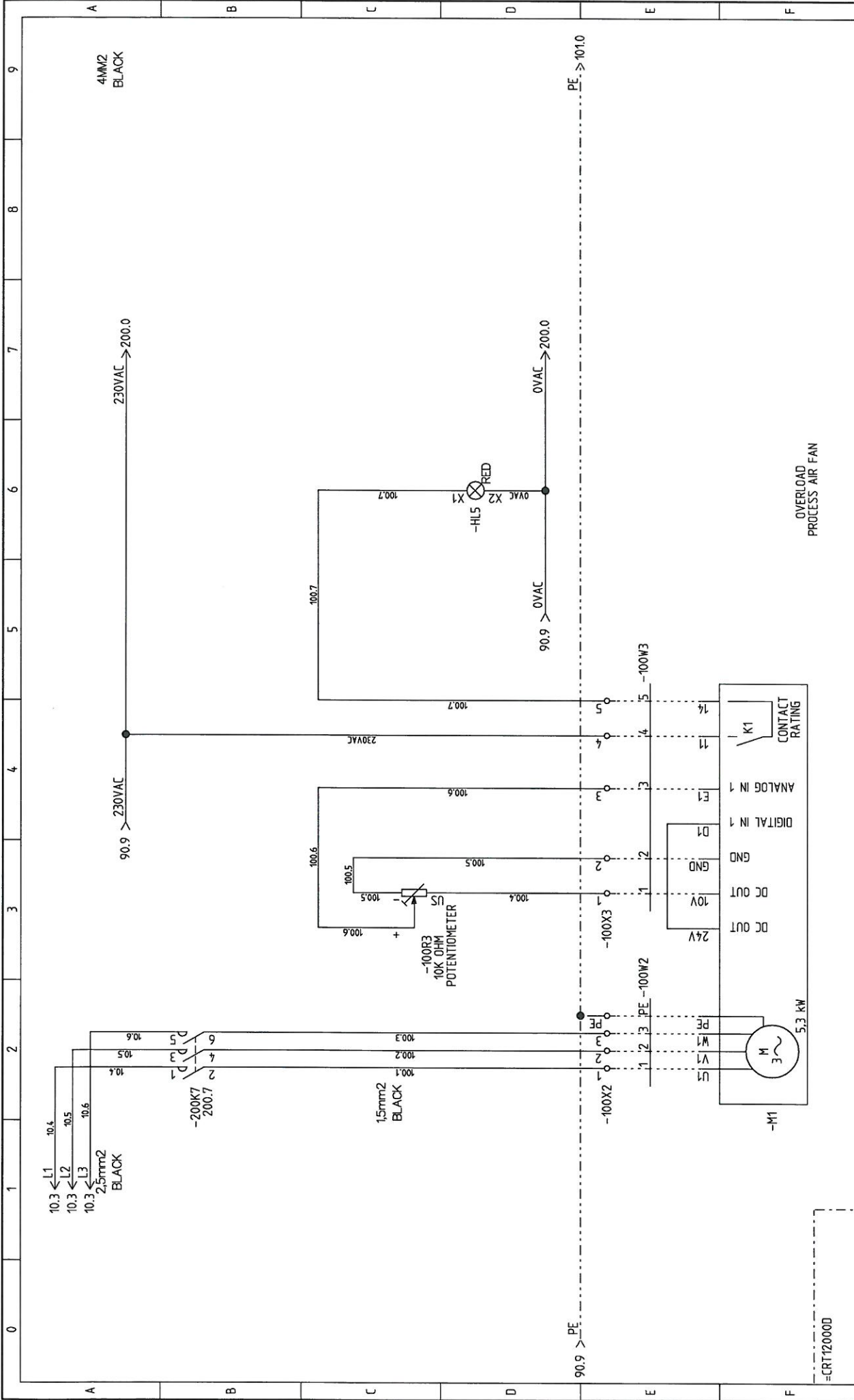
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29-10-2012

Initials
SD/TM

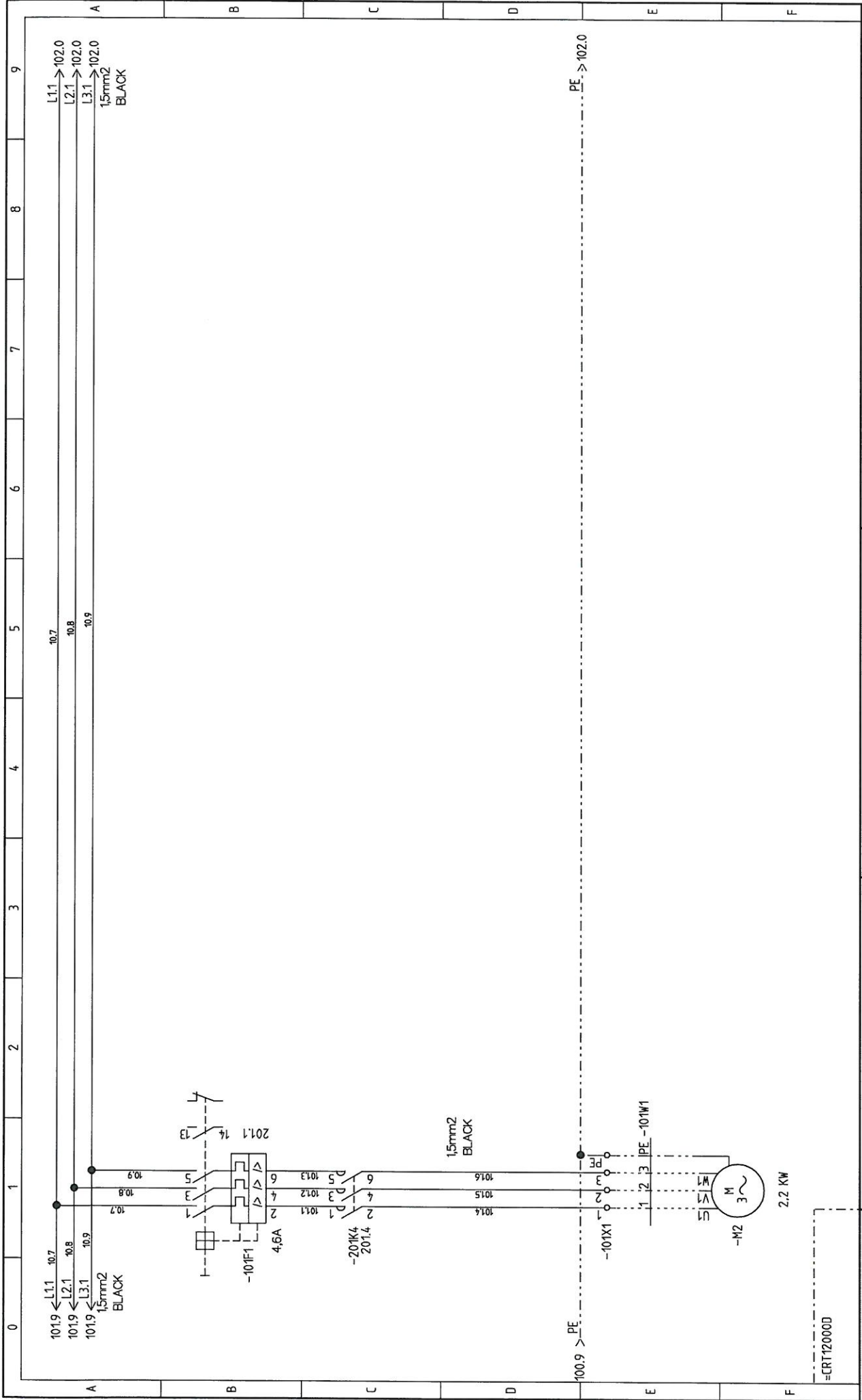
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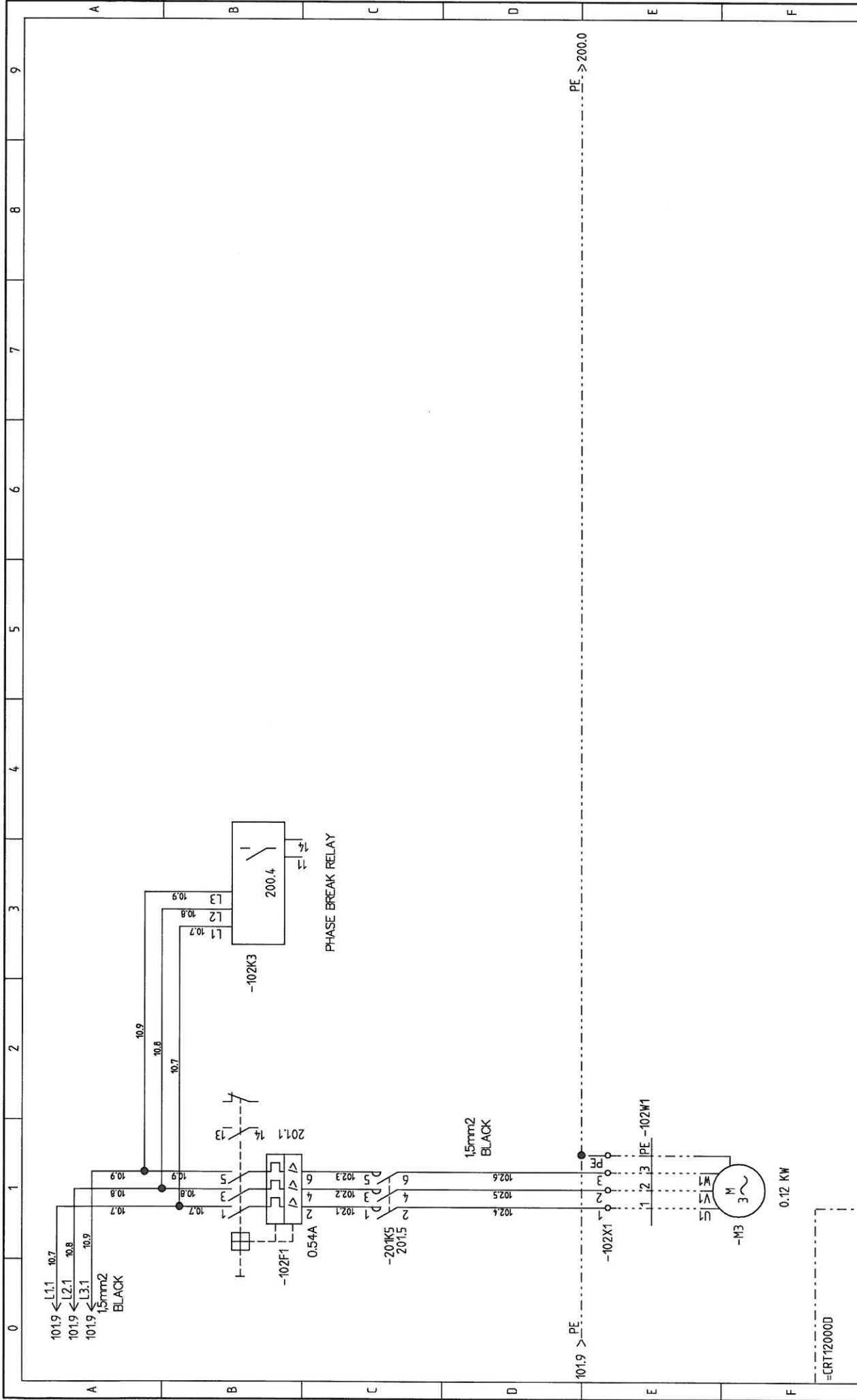
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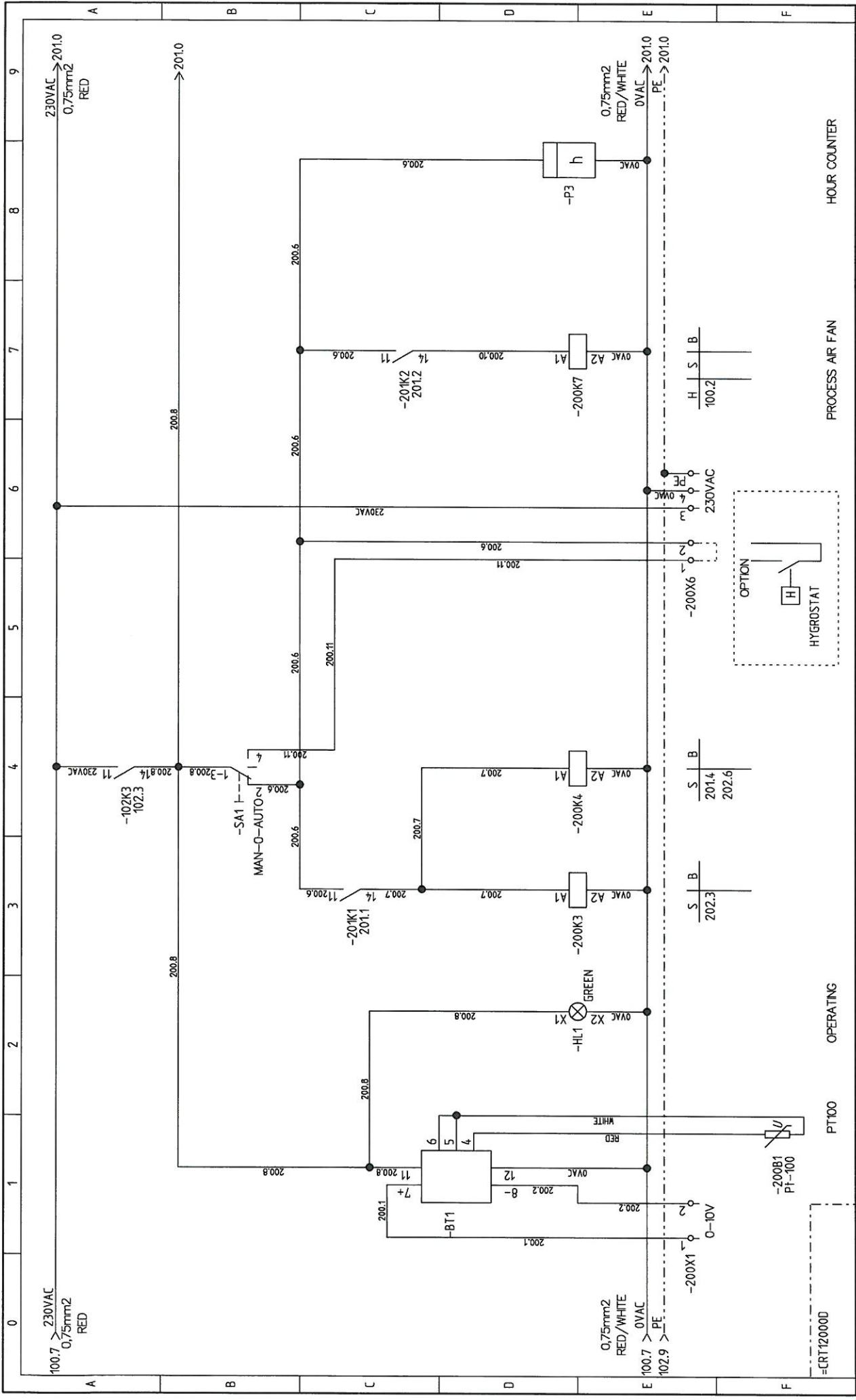
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					Date 29-10-2012		Document Audit		Next page =ERT12000D/101		Page 100	



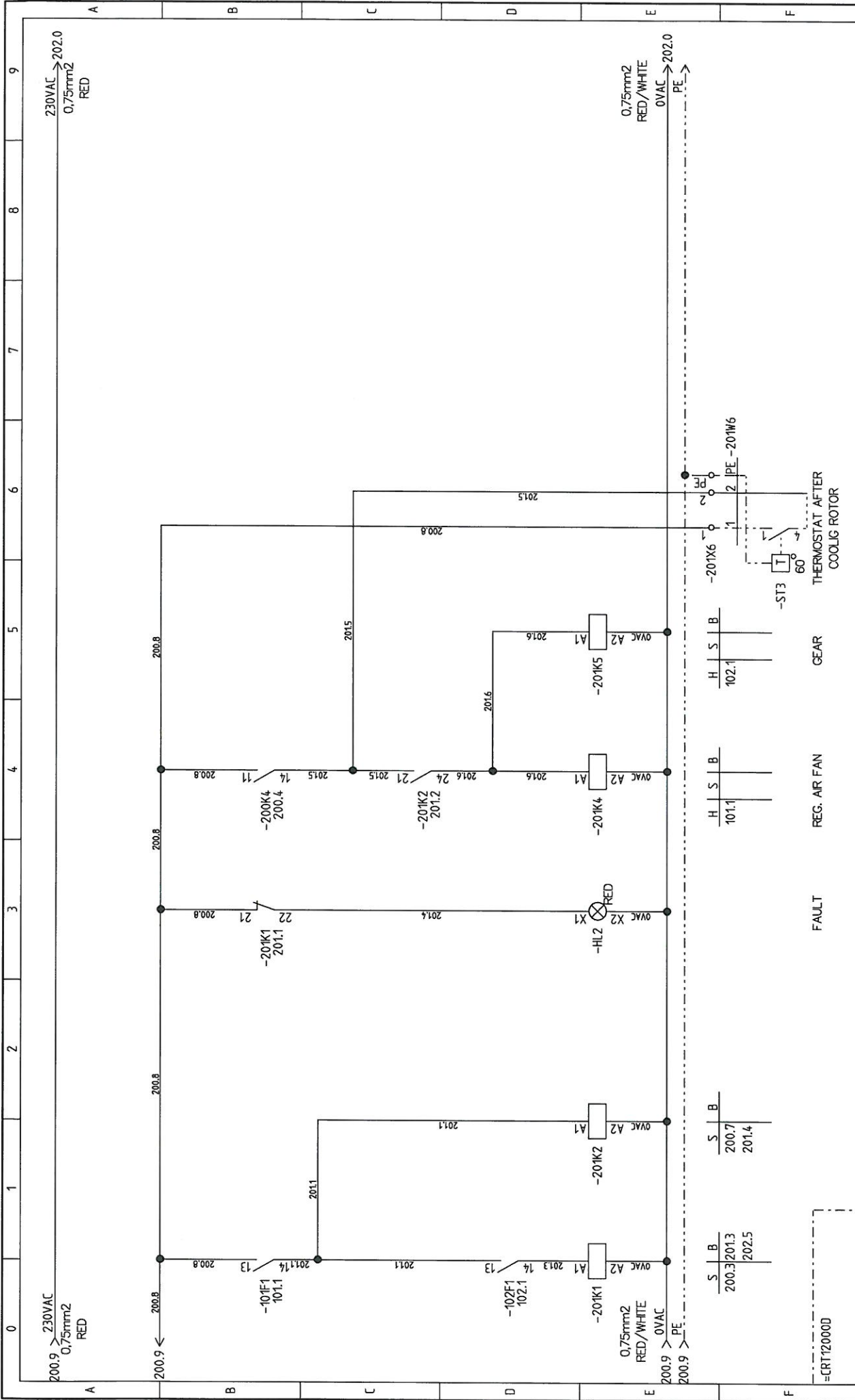
REG. AIR FAN POWER CIRCUIT	Project	E14-1230-2 CRT120000 ECB	Initials	DCC	&EFS	Pages
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COTES +4558196322	COTES A/S Industrivej 31A DK 4230 Skælskøer	=CRT120000				



Project E14-1230-2 CRT120000 ECB	Initials SD/TM	DCC	&EFS	Pages 10
GEAR POWER CIRCUIT		COTES A/S Industrivej 31A DK 4230 Skælskøer		
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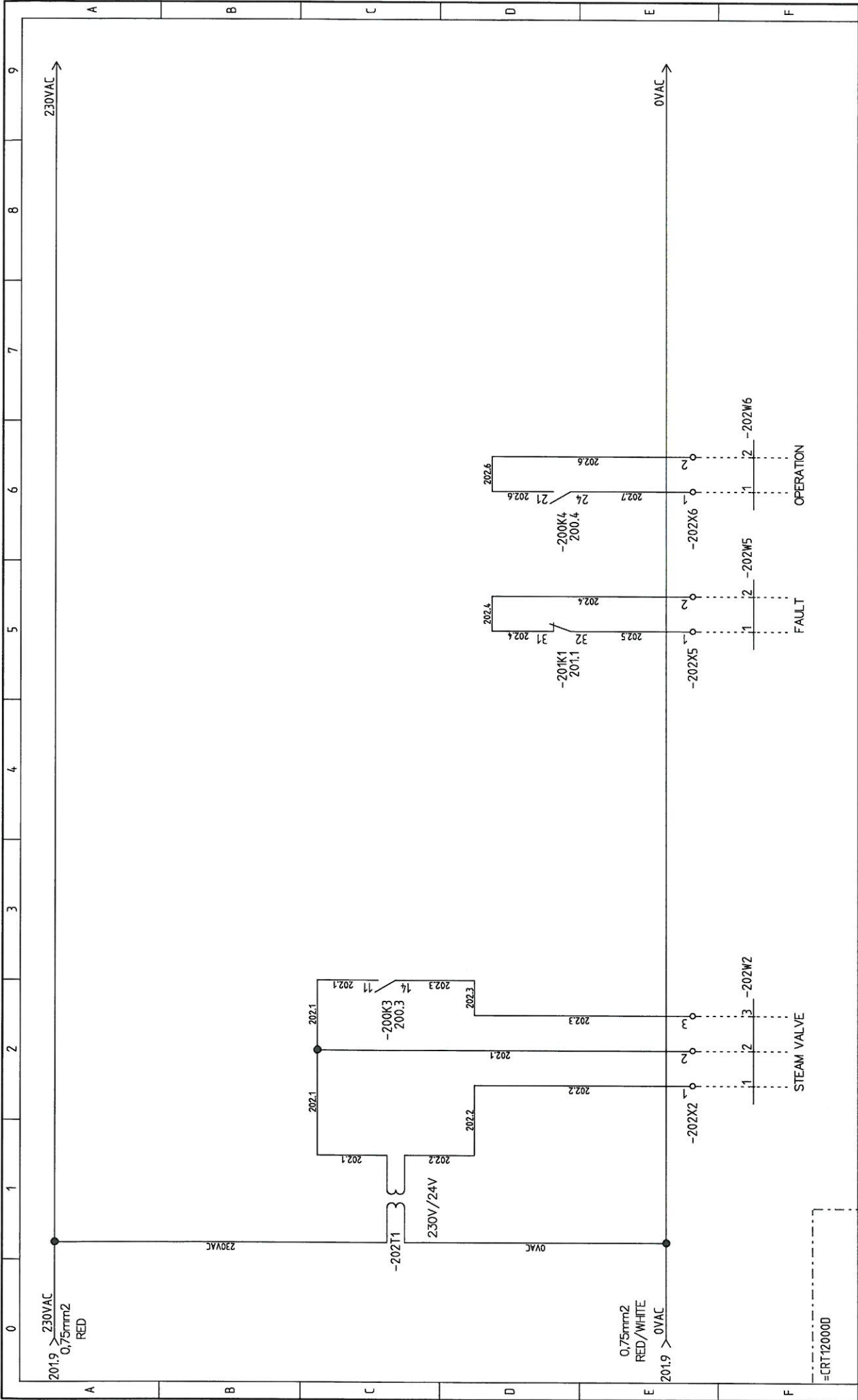


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				FAULT REG. AIR FAN GEAR THERMOSTAT AFTER COOLIC ROTOR	Document =RT120000/202	Next page =RT120000/202	Page 201		

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Function (=)	Page	Documenttype	Documenttype	Documenttype	Audit date			
	1	Dokumentliste			29-10-2012			
	1	Kredsskema	PLATE		29-10-2012			
=CRT12000D	10	Kredsskema	POWER CIRCUIT		29-10-2012			
=CRT12000D	42	Kredsskema	CONTROL CIRCUIT, POWER		29-10-2012			
=CRT12000D	90	Kredsskema	COOLING FAN CABINET		29-10-2012			
=CRT12000D	100	Kredsskema	PROCESS AIR FAN / PHAASE BREAK RELAY		29-10-2012			
=CRT12000D	101	Kredsskema	REG. AIR FAN		29-10-2012			
=CRT12000D	102	Kredsskema	GEAR		29-10-2012			
=CRT12000D	200	Kredsskema	CONTROL CIRCUIT		29-10-2012			
=CRT12000D	201	Kredsskema	CONTROL CIRCUIT		29-10-2012			
=CRT12000D	202	Kredsskema	CONTROL CIRCUIT		29-10-2012			
=CRT12000D	1	Produktliste						
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Productlist

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=CRT120000		-BT1	111248	ELK3371000E, 100-240VAC		Kredtskema	200	1
=CRT120000		-H	COTES	HYGROSTAT		Kredtskema	200	6
=CRT120000		-HL1	110294	LOVATO LP2TILM3		Kredtskema	200	2
=CRT120000		-HL2	110295	LOVATO, LP2TILM4		Kredtskema	201	3
=CRT120000		-HL5	110295	LOVATO, LP2TILM4		Kredtskema	100	6
=CRT120000		-M1	ZIEHL-ABEGG 400V/50Hz	EC-BLUE 5.3 KW		Kredtskema	100	2
=CRT120000		-M2	110502	VEN, 2.2KW, 400V, 3PH		Kredtskema	101	1
=CRT120000		-M3	110470	400V/50, 3PH, 0,12KW, 1380 RPM.		Kredtskema	102	1
=CRT120000		-M4	1117805	FAN FOR COOLING OF E-BOX, 230V		Kredtskema	90	1
=CRT120000		-P3	112305	HOUR COUNTER, 230V/50, MÜLLER BW7029		Kredtskema	200	8
=CRT120000		-OS1	110213	DESIM, NLT40/3E/Z3, 40A, 3P		Kredtskema	10	1
=CRT120000		-SA1	110215	SONTHEIMER, U1/8ZM/F621/DK		Kredtskema	200	4
=CRT120000		-ST3	111204	EGO 30-110GR., 12K		Kredtskema	201	6
=CRT120000		-42F1	110171	SCHRACK, BM6 18202, 2P, 2A		Kredtskema	42	1
=CRT120000		-42F3	110167	BM6 171021P, 2A		Kredtskema	42	3
=CRT120000		-42T1	112402	MURR ELECTRONIC, 400/230VAC-250VA		Kredtskema	42	1
=CRT120000		-100R3		10K OHM		Kredtskema	100	3
=CRT120000		-101F1	822001 / 822250	LOVATO, SM1B32 4-6.5A / AUXILIARY BLOCK		Kredtskema	101	1
=CRT120000		-102F1	822003 / 822250	LOVATO, SM1B12, 0.4-0.63A / AUXILIARY BLOCK		Kredtskema	102	1
=CRT120000		-102K3	111881	LOVATO, PMV20A575		Kredtskema	102	3
=CRT120000		-200B1	111234	PT-100		Kredtskema	200	1
=CRT120000		-200K3	111916 / 111917	FINDER 3P CO. 230V, 10A / SOCKET		Kredtskema	200	3
=CRT120000		-200K4	111916 / 111917	FINDER 3P CO. 230V, 10A / SOCKET		Kredtskema	200	4
=CRT120000		-200K7	820003	LOVATO BF1210A230		Kredtskema	200	7
=CRT120000		-201K1	111916 / 111917	FINDER 3P CO. 230V, 10A / SOCKET		Kredtskema	201	1
=CRT120000		-201K2	111916 / 111917	FINDER 3P CO. 230V, 10A / SOCKET		Kredtskema	201	2
=CRT120000		-201K4	820002	LOVATO, BF0910A230		Kredtskema	201	4
=CRT120000		-201K5	820002	LOVATO, BF0910A230		Kredtskema	201	5
=CRT120000		-202T1	112406	MURR ELECTRONIC, 230/24VA-100VA		Kredtskema	202	1

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