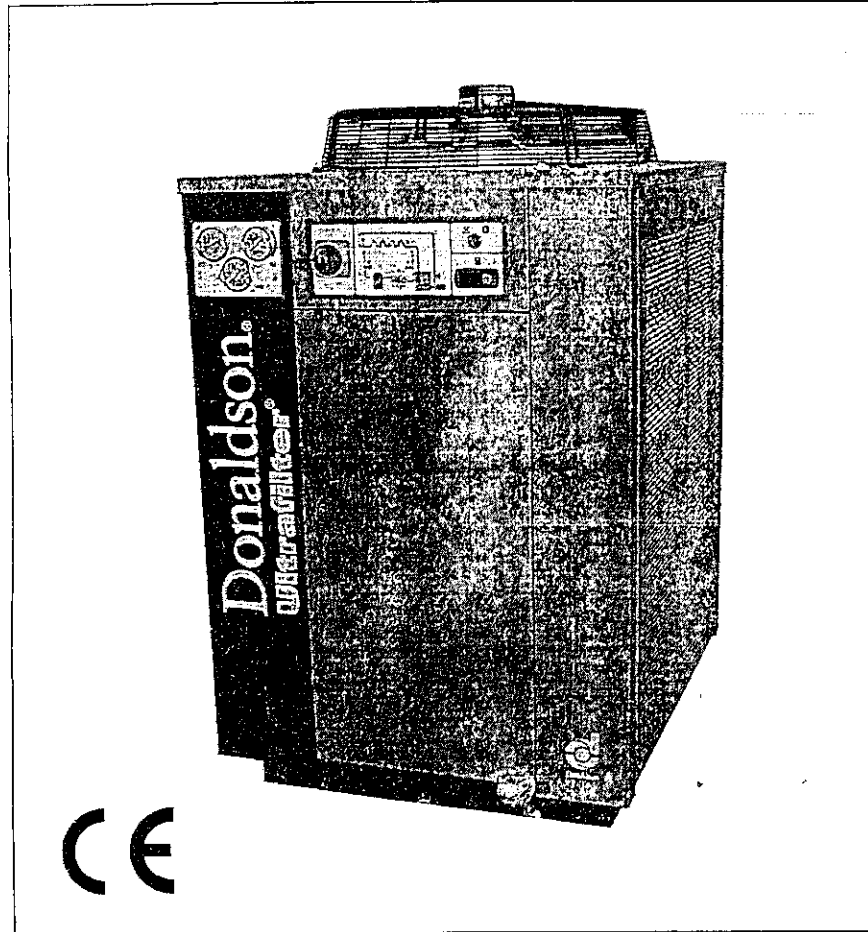


OPERATION MANUAL


Donaldson®
Ultrafilter®



MI-089 rev.6
18.02.2004

ultracool midi
0400 Indigo 50/60Hz





Warnings

Warnings

This Operation Manual is to be followed by all persons working with the unit. It is imperative that this Manual is made freely available at all times to service personnel and is kept at the point where the unit is installed.

The basic maintenance, as indicated in point 5.1, should be carried out by properly trained personnel and, if necessary, under the supervision of a person qualified for this job.

Ultrafilter personnel, or personnel authorised by ultrafilter, should carry out any work in the refrigerating or electric circuit during the warranty period. After the warranty period, the work must be carried out by qualified personnel.



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Attention. Points of special interest to keep in mind.

1 Introduction

1.1 General notes

- This water chiller complies fully with CE (50Hz version) and it is UL and C-UL approved (60Hz version).
- The Company does not accept responsibility if safety regulations are not met during handling, operation, maintenance and repair, even though these may not be strictly stated in this operation manual.
- We recommend the translation of this operation manual into the native language of foreign workers.
- The usability and life cycle of the water chiller as well as avoiding premature repairs depends on proper operation, maintenance, care and competent repair under consideration of this operation manual.
- We are constantly updating our products and are confident that they respond to the latest scientific and technological demands. However, as manufacturers, we do not always know the end use or the total range of our products' applications. Therefore we cannot accept liability for our products in applications where additional safety measures may be necessary. We highly recommend that users inform us of the intended application in order to undertake additional safety measures, if necessary.

1.2 Safety regulations



The operator has to observe the national working, operating and safety regulations. Also, existing internal factory regulations must be met. Maintenance and repair work must only be carried out by specially trained personnel and, if necessary, under supervision of a person qualified for this work.

- Protective or safety devices must not be removed, modified or readjusted.
- During operation of the water chiller none of the protective or safety devices must be removed, modified or readjusted, temporarily or permanently.
- Only use correct tools for maintenance and repair work.
- Use original spare parts only.
- All maintenance and repair work must only be carried out to the machine once it has been stopped and disconnected from the power supply. Ensure that the water chiller cannot be switched on by mistake by unplugging it.
- Do not use flammable solvents for cleaning.
- Keep the surrounding area absolutely clean during maintenance and repair work. Keep free of dirt by covering the parts and free openings with clean cloth, paper or adhesive tape.
- Ensure that no tools, loose parts or similar are left inside the system.



Installation

2 Installation

2.1 Reception and Inspection



On receipt of the ultracool unit, it must be inspected for damage during transport. In the case of any damage, external or internal, this cannot be referred to the manufacturer because all units are checked before dispatch. **If any damage is observed, this should be documented and reported to the forwarding company. The ultrafilter warranty does not include any damages incurred during transportation.**

The refrigerant circuit controls are set before shipment of the unit. They should not be re-adjusted under any circumstances (except by an authorized service agent). This would void the warranty of the unit.

2.2 Transportation



Keep the unit upright at all times. Do not tilt when shipping or moving. **The tilting of the ultracool unit may affect the internal suspension of the refrigerant compressor.**

The ultracool unit must be transported by palet jack or forklift truck.

2.3 Site

The ultracool unit must be installed in an atmosphere where the range of temperatures is within the indicated margins mentioned in point 3.1. For ambient temperatures lower than 5°C (41°F) it is necessary to add ethylene glycol to the water of the circuit, as indicated in point 2.4.

We recommend the installation of the ultracool unit in a well-ventilated site and in a corrosive-free, dust-free atmosphere.

In the case of out-door installation the chiller must be protected from rain with a roof and it must be installed in such way that the control panel receives as few direct sunlight as possible.

Around the ultracool unit it should be left a space of 1,5 m (60"). It is important to facilitate maintenance work and cleaning, especially in front of the condenser grid. The inlet of fresh air onto the condenser should be in the most direct way possible, avoiding any chance of air recycling (the ceiling above should not be at less than 1,5m (60")).

2

Installation

2.4 Installation



The ultracool units must always operate with the panels closed to enable the inlet of fresh air only through the condenser.

If the operation of the ultracool unit is with ambient temperatures below 5°C (41°F), ethylene glycol or concentrate refrfluid must be added to the water of the installation and an authorised technical service must adjust the chiller. The ethylene glycol concentration is obtained according to the following chart.

Ambient temperature °C (°F)	5(41)	-5(23)	-15(5)
% Ethylene glycol	10	20	30

The ethylene glycol percentage is given as % measured as weight of the total mixture.

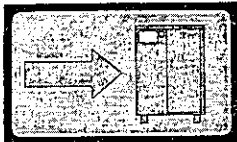
In the case of any modification in the quantity of water in the installation, the concentration of ethylene glycol should be checked.



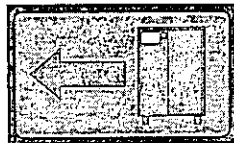
Do not use automotive antifreeze. Use lab grade ethylene glycol or refrfluid only! Do not use an ethylene glycol concentration above the 30%; this would damage the water pump.

2.5 Identification Labels on the ultracool unit

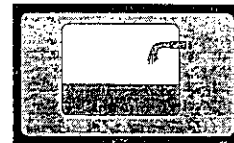
You can find the following labels stuck on the ultracool unit.



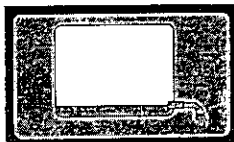
Water inlet from the installation to the ultracool unit.



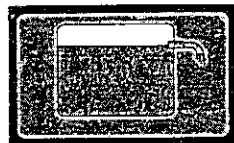
Water outlet from the ultracool unit to the installation.



Connection to fill the tank.



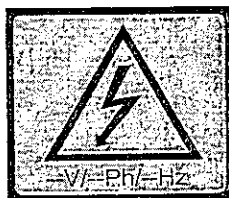
Drain.



Connection for the tank overflow.



Arrow showing turn direction of pump.



Power supply depending on version



Danger of cuts! Completely disconnect the chiller's power supply before opening this cover.

2.6 Water Connection



It must be installed an external valve at the ultracool outlet in order to adjust the working pressure of the water pump. The pressure value is indicated in the chiller's data plate.

The water connection of the installation of the ultracool unit should be carried out according to the indications of the labels (stickers) present on the unit.

The diameter of the inlet and outlet lines must be same size or larger than those corresponding to the water inlet and outlet of the ultracool unit. Always install thermal insulation for all pipes.



In the installations in which the water level of the circuit exceeds the maximum level of the tank inside the ultracool unit, it will be necessary to install a check valve in the water outlet of the ultracool unit and a solenoid valve in the water inlet. The supply of this solenoid valve will be carried out by terminals designed for that purpose (see electrical diagrams).

2.7 Electrical Connection

The electrical supply is 400V/3~/50Hz or 460V/3~/60Hz depending on the version

It must be checked that the supply voltage does not exceed a maximum variation of 10% referring to nominal.

For the electrical supply of the ultracool unit, use an appropriate electrical line according to the data in the characteristics plate.



A system of fuses or circuit breakers must be installed before the power inlet connection to the ultracool unit. The maximum size of these protections is defined in the electrical diagram.

There are two prepared terminals to connect a remote on-off switch away from the unit. These terminals are at 24V.

There are two prepared terminals in order to connect a solenoid valve to the water inlet to the ultracool unit, in such a way that when the ultracool unit starts, the solenoid valve opens up. These terminals are at 24VAC.

3.3 Chiller start-up

When the ultracool unit is started for the first time, it is necessary to turn ON the Main power switch (element 1 in the control panel, see point 4) and wait six hours before continuing with the start-up sequence. This time is necessary for the crankcase of the compressor to heat it up.

The oil in the crankcase of the compressor remains warm whenever the main power switch is in the ON position and the unit is connected to the line voltage. For this reason stop the ultracool unit by using the off-switch, leaving the Main power switch in the ON position.

Fill the tank **with water of the required quality (see annex 9) or with refrifluid** through the provided connection until the maximum level of the tank is reached.

Start the ultracool unit with the On/Off switch (element 2 in the control panel, see point 4). Stop the ultracool unit and refill the tank to the correct water level.

Repeat this procedure until the water level in the tank remains constant.



It's necessary to verify the direction of rotation of the pump at the initial start up. To do so, start and stop the ultracool unit, using the On/Off switch (it is easier to see the turn direction when the pump is stopping). In the case of the pump rotating in the opposite direction from the indicated, it will be necessary to exchange two phases in the main power supply. It will not be necessary to check the turn direction of the fans, because they are delivered in phase with the pump. Since it may be difficult to see the pump's rotation direction, verify that you did this operation correctly when the motor fan starts working: The air should enter the condenser and go out through the top of the chiller. If the air is moving in the opposite direction then exchange two phases in the main power supply.

Connect the On/Off switch so that the ultracool unit starts. At the same time the digital thermometer and all the indicators that should light up will turn on too, according to their function.

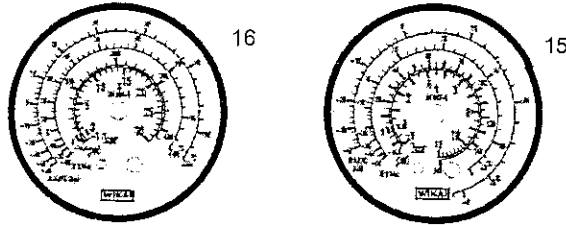
On the control thermostat select the desired temperature of the cold water outlet (see point 4.2.1). The ultracool units are delivered with a pre-set temperature of 10°C (50°F).



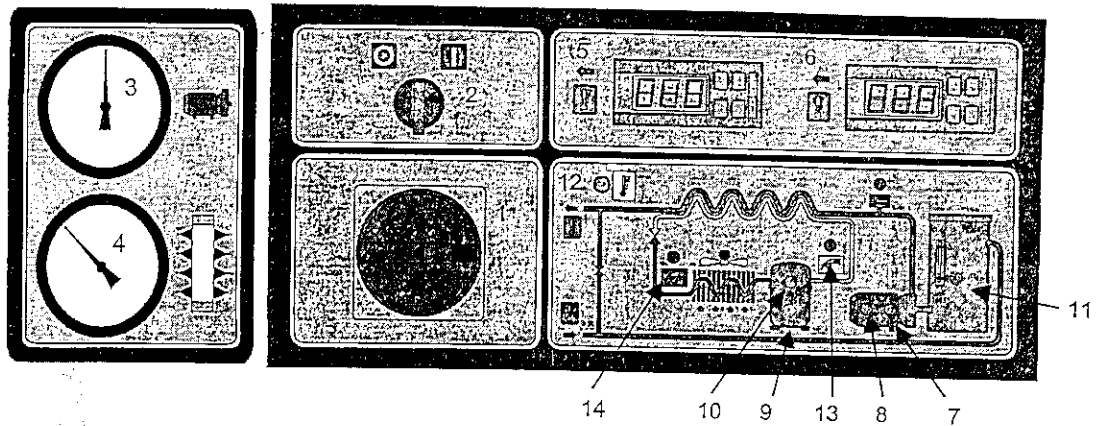
Adjust the water pressure, using an external valve at the ultracool outlet, to the value indicated on the data plate (Nominal pressure).

4 Control Panel

Refrigerating circuit gauges OPTIONAL



Control Panel



4.1 Components of the Control Panel

The control panel consists of the following elements:

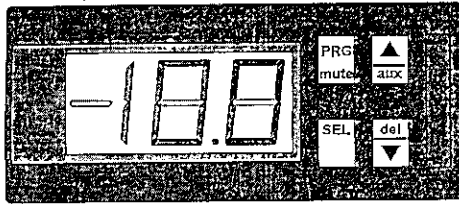
1. **Main power switch:** connects and disconnects the ultracool unit from the power supply.
2. **On-Off switch:** starts up the different elements that make up the ultracool unit.
3. **Water gauge 1:** indicates the working pressure of the pump. While the chiller is working its value must be adjusted to the nominal pressure indicated on the characteristics plate (P_{nom}). (See section 3.3)
4. **Water gauge 2:** indicates the pressure drop of the water filter or the water outlet pressure.
5. **Control thermostat:** indicates the cold water temperature at the outlet of the ultracool unit and enables it to be regulated.
6. **Low ambient thermostat:** Indicates the inlet water temperature to the unit. When the chiller is stopped but the main power switch is on. This thermostat starts the pump when the water temperature is lower than a certain level. This prevents the water from freezing when the ambient temperature is very low.
7. **Pump indicator:** this remains lit when the pump is working.
8. **Pump alarm indicator:** this is lit when there is a pump stop due to over-intensity.
9. **Compressor indicator:** this remains lit when the compressor is working.



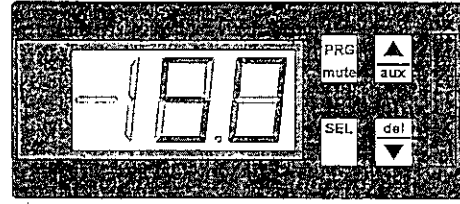
Control Panel

- 10. **Compressor alarm indicator:** this is lit when there is a compressor stop due to over-intensity.
- 11. **Water level alarm indicator:** this is lit when the water level in the tank is too low. It causes the ultracool unit to stop.
- 12. **Low flow/temperature control indicator:** This flow control can stop the compressor when there is no water circulation through the external water circuit. In this case some flow still circulates inside the chiller. The temperature control can also stop the compressor when you try to reach water temperatures below 7°C (45°F). To be able to reach temperatures below that contact an authorised technical service.
- 13. **Low refrigerant pressure alarm indicator:** this is lit when the pressure of the refrigerating circuit (see element 15) is below the minimum allowed (1 bar) . It causes the refrigerant compressor to stop.
- 14. **High refrigerant pressure alarm indicator:** this is lit when the pressure of the refrigerating circuit (see element 16) is higher than the maximum allowed (27 bar). It causes the refrigerant compressor to stop.
- 15. **Low pressure gauge:** indicates the pressure at the low-pressure side of the refrigerating circuit (before the compressor). **OPTIONAL**
- 16. **High pressure gauge:** indicates the pressure at the high-pressure side of the refrigerating circuit (after de compressor). **OPTIONAL**

4.2 Control Thermostat



Display in °C



Display in °F

4.2.1 Operation

During normal operating conditions, the display of the control thermostat shows the cold water temperature measured by the probe. In the 50Hz version the display shows the temperature in °C and in the 60Hz version it shows it in °F as depicted above.

Setting the temperature: Follow these steps to introduce the required working temperature:

- Hold down for 2 seconds the button **SEL** and the current set temperature will start flashing.
- To increase or to decrease the value of the setpoint, use the **UP** and **DOWN** buttons.
- Press **SEL** again, to confirm the new value.

If an alarm sounds: press the button **PRG** to silence the alarm. The alarm code will stay until the cause of the alarm disappears.



5 Maintenance

5.1 Basic Maintenance

Weekly:

Verify that the water temperature indicated on the control thermostat is approximately at the setpoint.

Verify the pressure of the pump.

Verify the water level in the tank.

Verify the state of the water filter, if the pressure drop exceeds 0.5 bar (8 psi) change the filter element.

Monthly:

With the Unit disconnected (Main power switch Off), clean the condenser with a blast of compressed air, from the inside towards the outside.

Clean the housing, internally and externally, eliminating the dust present especially on the water pump rack.

Yearly:

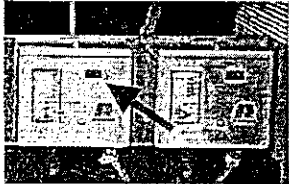
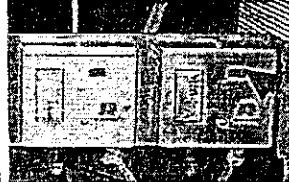
Change the filter element and refill the water circuit with clean water or refriguid.

6

Troubleshooting

6 Troubleshooting

In the following chart the possible causes for an alarm are given together with their solution:

DEFAULT	CAUSE	SOLUTION	RESTART PROCEDURE
<p>Alarm due to high pressure of the refrigerant the pressure of refrigerating circuit (see element 16 page 10) is higher than the maximum allowed (27 bar)</p>	Lateral panels of the housing open	Close the panels	<p>Disconnect the chiller (On/Off and Main power switch both Off, see point 4). Open the front panel of the chiller and reset the High-pressure safety switch (SHP) by pressing its button. Turn both the Main power switch and the On/Off switch back on.</p> 
	Low airflow into the condensor	Clean the condensor	
	The ambient temperature is too high	Wait until the ambient temperature is lower	
	Water temperature too high	Try to cool down the water in the circuit running the chiller with the application stopped	
<p>Motor fan not working</p>	Motor fan not working	Check the motor fan fuses. If the problem persists contact authorised technical service.	
<p>Alarm due to low pressure of the refrigerant the pressure of the refrigerating circuit (see element 15 page 10) is below the minimum allowed (1 bar)</p>	Gas leakage	Contact authorised technical service.	<p>Disconnect the chiller (On/Off and Main power switch both Off, see point 4). Open the front panel of the chiller and reset the Low-pressure safety switch (SLP) by pressing its button. Turn both the Main power switch and the On/Off switch back on.</p> 
<p>Water level alarm</p>	Water leakage	Check the water circuit and refill the tank.	<p>The level switch automatically resets itself when there is enough water in the tank</p>

7 Technical Features

UC		400 Indigo 50Hz	400 Indigo 60Hz	
Cooling capacity	kW (ton)	43.1(12.2)	39.8(11.3)	
Water flow	l/h (US gal/min)	7415(32.6)	6132(27)	
Water pressure	bar (psi)	4.8(70)	4.2(61)	
Refrigerant charge	kg (lb)	28(62)	28(62)	
Compressor	kW	10.8	14.7	
Condenser	kW (ton)	69.9(19.8)	71.1(20.2)	
Evaporator	kW (ton)	47.4(13.5)	40.1(11.4)	
Motor fan	N°	2	2	
	KW(each)	0.7	1.1	
	KW(total)	1.4	2.2	
	m3/h (scfm)	19000(11183)	19000(11183)	
Water pump	kW	2.6	2.1	
	max flow	l/h (US gal/min)	14000(61.6)	16000(70.4)
	min flow		1400(6.2)	1600(7)
	max pres.	bar (psi)	5.9(86)	4.5(65)
	min pres.		3.8(55)	2.5(36)
Water tank volume	litre (US gal)	300(79)	321(85)	
Water connections		1 ½" BSP	1 ½" NPT	
Dimensions	Front	mm (in)	1050(41)	1050(41)
	Depth	mm (in)	1610(63)	1610(63)
	Height	mm (in)	1825(72)	1825(72)
Weight	kg (lb)	560(1232)	560(1232)	
Power	kW	14.8	19	
Max. fuse size	A	50	50	
Voltage	V/P/Hz	400/3/50 Hz	460/3/60Hz	
Nominal COP		3.53	2.35	

All data related to the following conditions: Water outlet temperature 10°C (50°F) and ambient temperature 25°C (77°F).

9 Annexes

9.1 Water quality

In order to protect the water circuit of the ultracool units, the water to be cooled must have specific physical/chemical properties so that it is not aggressive. If this water is outside any of the limits listed in the table below, it can seriously damage some of the materials of the ultracool unit.

Parameter	Limit values
pH	7 – 8
Total Hardness (TH)	< 150 ppm
Conductivity	50 – 500 μ S/cm
NH ₃	< 2 ppm
Total iron ions (Fe ²⁺ and Fe ³⁺)	< 0.2 ppm
Chloride (Cl ⁻)	< 300 ppm
H ₂ S	< 0.05 ppm
Solid particles	< 150 μ m

The Total Hardness is specified in ppm (mg/L) of Ca₂CO₃.

Please note that ultra pure waters like deionised water can also be harmful for some of the materials of the ultracool units as they have a conductivity below 50 μ S/cm.

The product refrfluid supplied by ultrafilter includes in its composition an anticorrosive, bactericide and antifreeze (until -7°C / 19.4 °F). It has the following characteristics:

Parameter	Limit values
pH	7.5
Total Hardness (TH)	< 30 ppm
Conductivity	50 μ S/cm
NH ₃	0 ppm
Total iron ions (Fe ²⁺ and Fe ³⁺)	< 0.2 ppm
Chloride (Cl ⁻)	< 1 ppm
H ₂ S	0 ppm
Solid particles	< 50 μ m

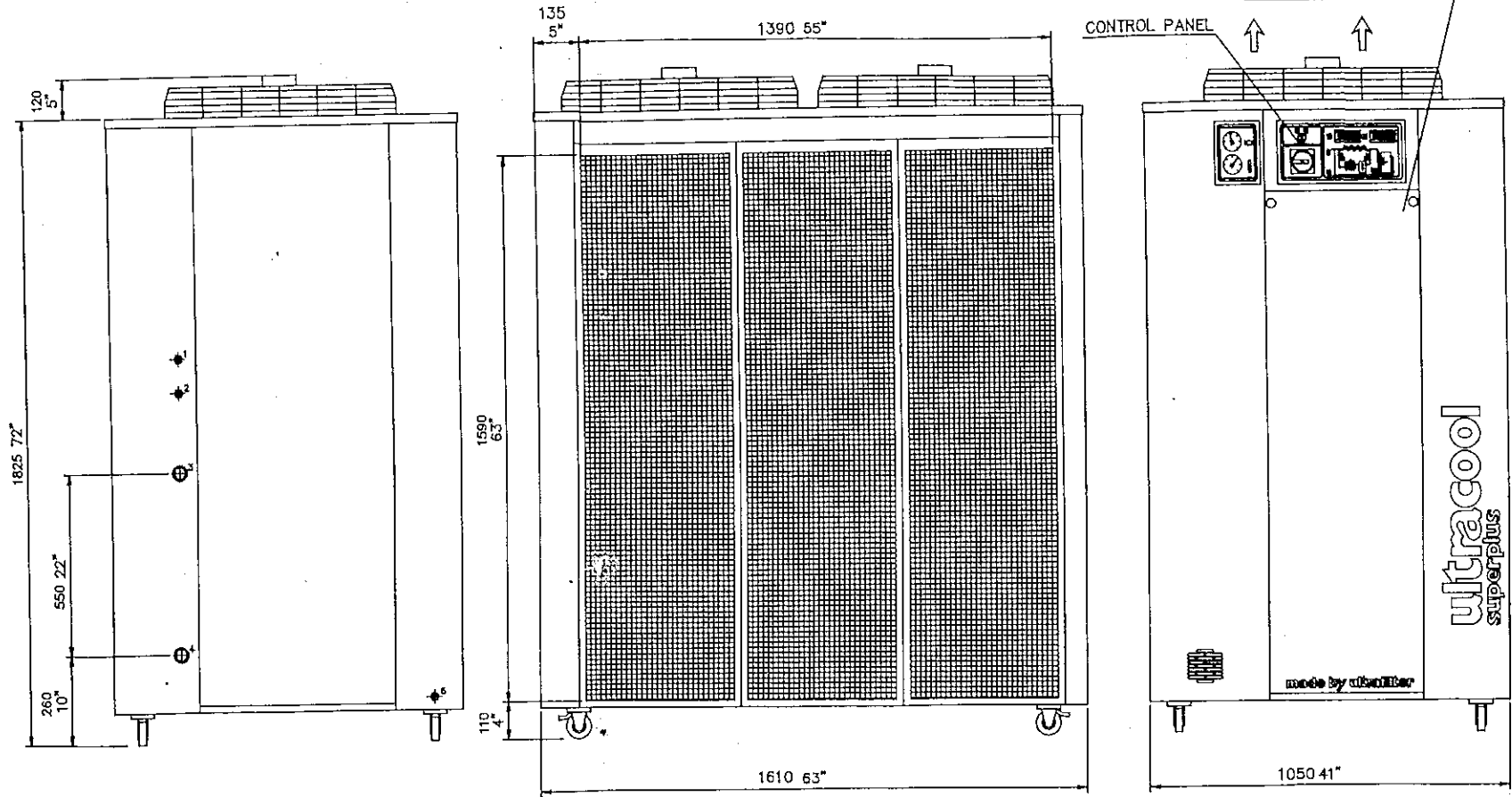
A concentration of ethylene-glycol higher than the 30% can seriously damage the pump of the ultracool units.



ultrafilter will not accept any warranty for any damage caused by water that is out of one or more of the above limits. Therefore, if there is not a total security on the water quality we advise the use of our product refrfluid. This fluid has been specially designed for the protection of closed water circuits. Besides this ultrafilter offers the possibility of doing a basic analysis of a water sample supplied by the customer.

10 Spare parts

	Amount	UC-400 Indigo	UC-400 Indigo
		50Hz	60Hz
		Article number	Article number
Compressor	1	0111230000	0111230000
Condenser	1	E3755004	E3755004
Evaporator	1	E5293034	E5293034
Motor fan	2	E5204252	E5204258
Pump	1	E4521398	E4521482
Water tank	1	E3590014	E3590014
Liquid vessel	1	E5351016	C210129000
Expansion valve	1	E5334225/C/G	E5334225/C/G
Dryer filter	1	0112095000	0112095000
High pressure safety switch	1	E5311402	E5311402
Low pressure safety switch	1	E5311203	E5311203
Control thermostat	1	E5326003	E5326003
Low flow/temperature thermostat	1	E5326003	E5326003
Pump thermostat	1	E5326003	E5326003
Liquid Solenoid valve	1	E5342008	E5342008
Sight glass	1	0104278000	0104278000
Refrigerant gas (kg/lb)		28 (62) R-407C	28 (62) R-407C
Level control	1	E4202004	E4202004
Water by-pass	1	E3491126	E3491126
Pump pressure gauge	1	E5544014	E5544022
Filter pressure gauge	1	E5544016	E5544020
Filter		218680-50	218680-50
Compressor contactor	1	E4242024S	E4242024S
Pump contactor	1	E4242004S	E4242002S
Motor fan contactor	1	E4242004S	E4242004S
Compressor circuit breaker		E4266126	E4266126
Pump circuit breaker	1	E4266044	E4266038
Motor fans fuse carrier	1	E4221420	E4221420
General switch	1	E4292016	E4292016
On/Off switch	1	E4132102	E4132102
2A Fuse	2	E4221231B	E4221231B
6A Fuse	1	E4221232	E4221232
Motor fan fuses	3	E4221238	E4221238
Control transformer	1	E4181910S	E4181936
Pressure transducer	1	E5328008T/C	E5328008T/C
Speed regulator controller	1	E5328006	E5328006
Speed regulator	1	E5328004	E5323028
Non-return valve	1	E5338316	E5338316
Differential valve	1	E5336612	E5336612
Condensing pressure regulation	1	E5336608	E5336608
Security valve/fusible plug	1	E5335508	E5828002



USA VERSION

- 1.- 1 1/2" NPT WATER INLET
- 2.- 1 1/2" NPT WATER OUTLET
- 3.- 1/2" NPT TANK FILLING
- 4.- 1/2" NPT DRAIN AND OVERFLOW

WEIGHT: 1232 lb

CE VERSION

- 1.- 1 1/2" BSP WATER INLET
- 2.- 1 1/2" BSP WATER OUTLET
- 3.- 1/2" BSP TANK FILLING
- 4.- 1/2" BSP DRAIN AND OVERFLOW

WEIGHT: 680 kg

DIMENSIONS IN mm (INCHES)



DIMENSIONAL DIAGRAM
ULTRACOOOL-0400 SP INDIGO

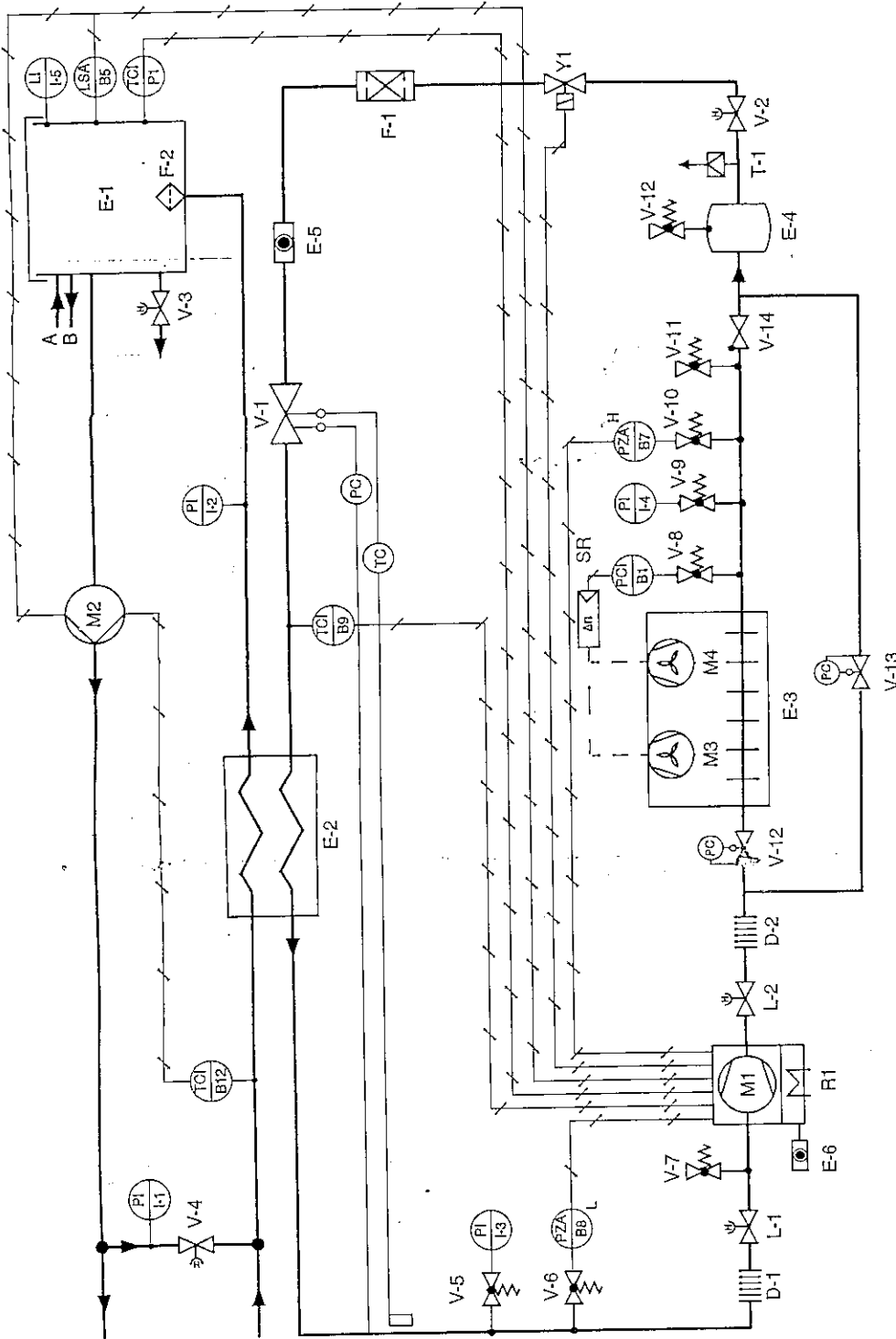
↑ VENTILATION AIR ↑

N°	6641	REV:	0
DATE:	18.06.03	DATE:	---
DIB.:	ROIG	APP.:	ESCUDE



FLOW DIAGRAM ULTRACOOL 0400 SP INDIGO

Nº: 6637	REV.: 5
DAT.: 16.06.03	DAT.: 09.02.05
DIB.: A. Catalan	APR.: X. Escudé



TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION	TAG	DESCRIPTION
E-1	Water tank	B1	Speed regulator controller	I-3/4	Pressure gauge (OPTIONAL)	V-3	Drain manual valve
E-2	Water - freon evaporator	B5	Water level switch	I-5	Level indicator	V-4	Water flow by-pass regulator
E-3	Freon condenser	B7	High pressure safety switch	T-1	Fusible plug (in 60Hz version)	V-5/12	Schrader valve
E-4	Freon accumulator	B8	Low pressure safety switch	M1	Freon compressor	V-13	Condensing pressure regulator
E-5	Sight glass	B9	Low flow/temperature control thermostat	M2	Pump	V-14	Differential valve
E-6	Sight glass - oil level	B12	Low ambient thermostat	M3/4	Motor fan	V-15	Non-return valve
F-1	Filter dryer	P1	Control thermostat	V-1	Expansion valve	Y1	Solenoid valve
F-2	Water filler	I-1/2	Water pressure gauge	V-2	Manual valve	D-1/2	Vibration adjuster
						SR	Speed regulator
						R1	Crank-case heater
						A	Filling tap
						B	Overflow tap

- M1 -- FREON COMPRESSOR
- M2 -- PUMP
- M3/4 -- MOTOR FAN
- KM1 -- COMPRESSOR CONTACTOR
- KM2 -- PUMP CONTACTOR
- KM3 -- MOTOR FANS CONTACTOR
- KA1 -- FLOW SWITCH TIMER
- KA2 -- ON/OFF INDICATOR RELAY
- KA3 -- ALARM RELAY
- KA5 -- LOW AMBIENT RELAY
- Q0 -- GENERAL SWITCH
- Q1 -- COMPRESSOR CIRCUIT BREAKER

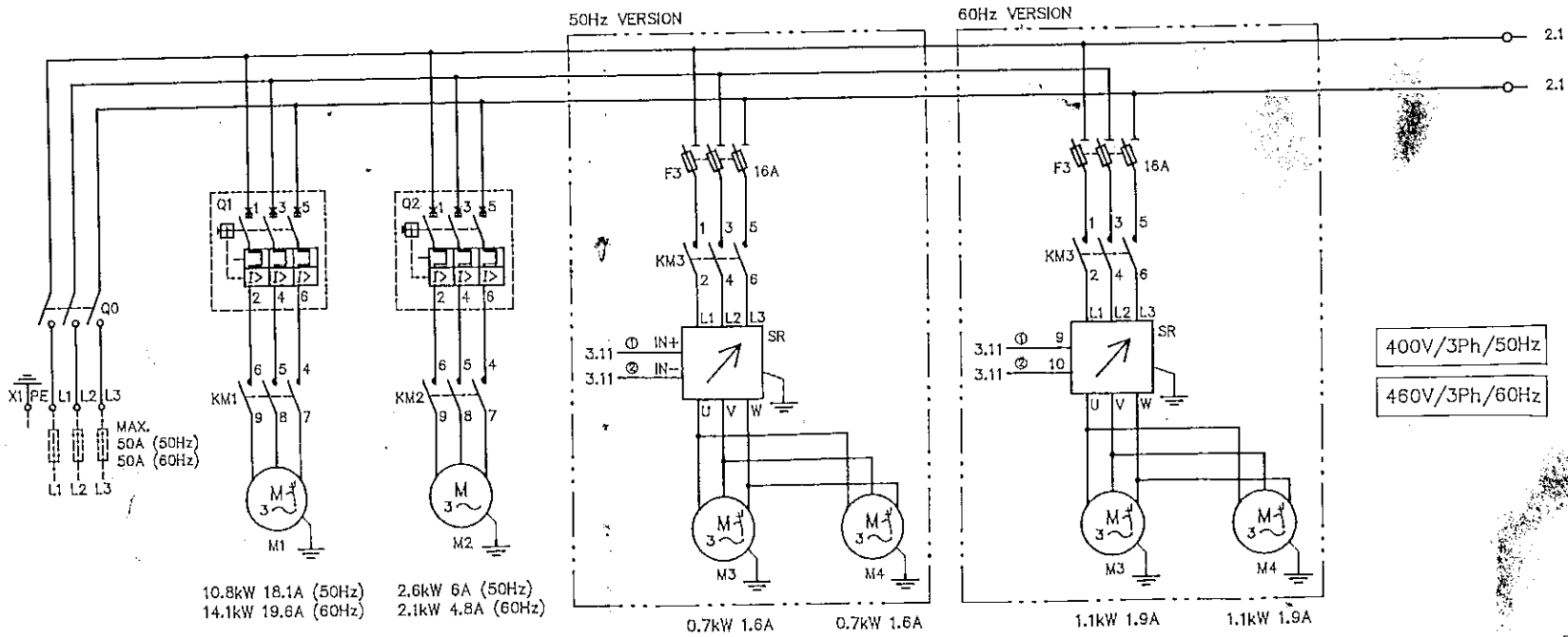
- Q2 -- PUMP CIRCUIT BREAKER
- F3 -- MOTOR FANS FUSES
- F1/2 -- OPERATION CIRCUIT BREAKER
- R1 -- CRANK-CASE HEATER
- S1 -- SWITCH ON/OFF
- B1 -- SPEED REGULATOR CONTROLLER
- B3/4 -- MOTOR FANS THERMOSTAT
- B5 -- WATER LEVEL SWITCH
- B7 -- HIGH PRESSURE SAFETY SWITCH
- B8 -- LOW PRESSURE SAFETY SWITCH
- B9 -- LOW FLOW/TEMP. THERMOSTAT
- B12 -- LOW AMBIENT THERMOSTAT

- T1 -- TRANSFORMER
- P1 -- CONTROL THERMOSTAT
- H1 -- WATER LEVEL ALARM INDICATOR
- H2 -- FLOW SWITCH ALARM INDICATOR
- H3 -- OVERVOLTAGE PUMP ALARM INDICATOR
- H4 -- OVERVOLTAGE COMPRESSOR ALARM INDICATOR
- H5 -- HIGH PRESSURE ALARM INDICATOR
- H6 -- LOW PRESURE ALARM INDICATOR
- H7 -- COMPRESSOR ON INDICATOR
- H8 -- LOW FLOW/TEMP. CONTROL INDICATOR
- H9 -- PUMP ON INDICATOR
- Y1 -- SOLENOID VALVE
- SR -- SPEED REGULATOR

X2 [2 | 9 | 12 | 14 | 15 | 16 | 18 | 20 | 22 | 28 | 32]

X1 [PE | L1 | L2 | L3 | 0 | 1 | 2 | 4 | 7 | 8 | 9 | 10 | 17 | 18 | 19 | 20 | 21 | 31 | 23 | 24 | 25 | 26 | 56 | 57 | 58]

24 VAG
MAX. 6A



ELECTRICAL DIAGRAM
ULTRACOOOL-0300/0400 INDIGO 24V

N°	6633/1	REV:	2
DATE:	12.06.03	DATE:	02.10.03
DIB:	PRATS	APR:	ESCUDE

SHEET 1/3

2001

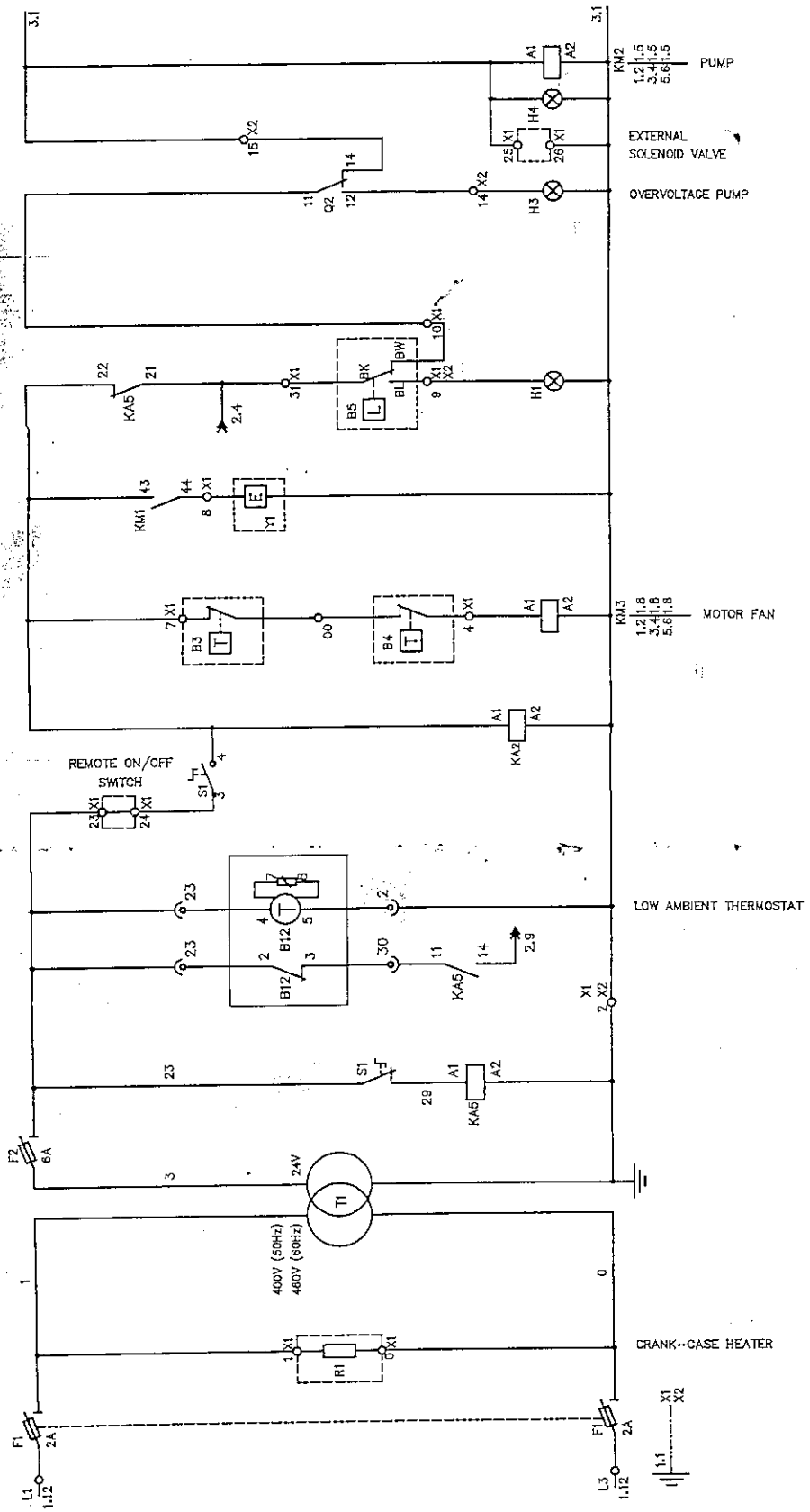


ELECTRICAL DIAGRAM

ULTRACOOOL-0300/0400 INDIGO 24V

N° 6633/2	REV.: 2
DAT: 12.06.03	DAT.: 02.10.03
DIB.: PRATS	APR: ESCUDE

SHEET 2/3



1	2	3	4	5	6	7	8	9	10	11	12	13
---	---	---	---	---	---	---	---	---	----	----	----	----

EE0300_INDIGO24V.DWG 1:1

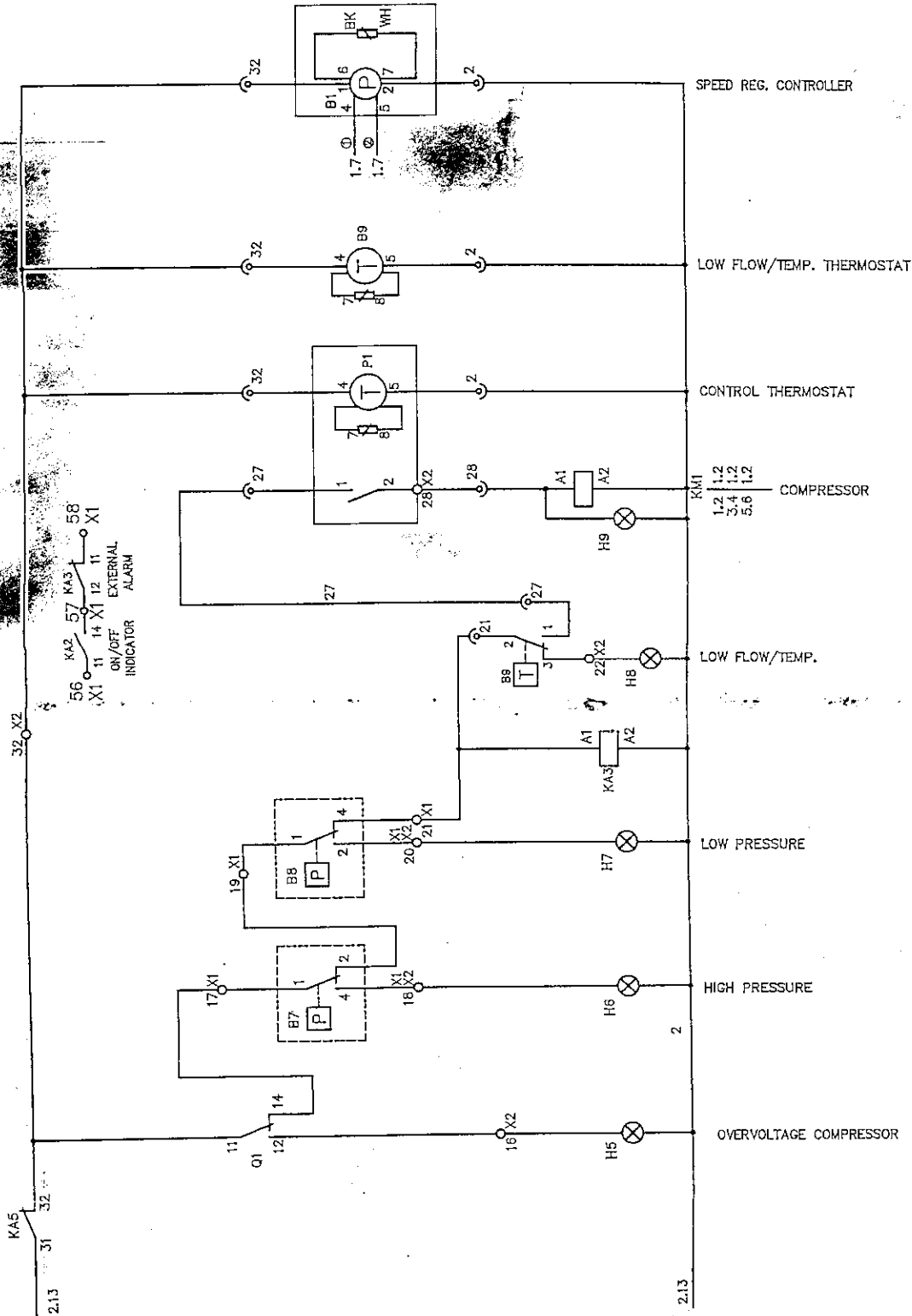


ELECTRICAL DIAGRAM

ULTRACOOL-0300/0400 INDIGO 24V

N° 6633/3	REV.: 2
DAT: 12.06.03	DAT.: 02.10.03
DIB.: PRATS	APR: ESCUDE

EEG300_INDIGO24c.DWG 1:1



SHEET 3/3

1	2	3	4	5	6	7	8	9	10	11	12	13
---	---	---	---	---	---	---	---	---	----	----	----	----

CE EC Declaration of conformity **GB**

89/392/EEC (Known as the 'Machinery Directive')
 91/368/EEC (Amendment to the 'Machinery Directive')
 93/44/EEC (Amendment to the 'Machinery Directive')
 97/23/EC (Defined by pressure equipment directive)

ultrafilter, S.A.

Based in Terrassa-Barcelona-Spain, Colom II
 Street, nº 606, Postal Code 08228

Declares that under our sole responsibility for
 supply/manufacture of the product:

Name Model Serial-Nr

ultracool-0400SP CE E6812022-90

To which this declaration relates, is in conformity with
 the Directive 89/392/EEC issued by the EUROPEAN
 COMMUNITY of the 14th. of June 1989.

CE EC Konformitäts Erklärung **D**

89/392/EEC (Bekannt als 'Maschinen Weisung')
 91/368/EEC (Änderung zur 'Maschinen Weisung')
 93/44/EEC (Änderung zur 'Maschinen Weisung')
 97/23/EC (Definiert in der Druckgeräteverordnung)

ultrafilter, S.A.

Mit Sitz in Terrassa-Barcelona-Spain, Colom II
 Strasse, nr. 606, Postfach 08228

Erklärt, daß unserer alleinigen Verantwortung
 unterliegt, das Lieferung/Herstellung des Produktes:

Name Modell Serien-Nr

ultracool-0400SP CE E6812022-90

Auf welches diese Erklärung Bezug nimmt, den erlassenen
 Weisungen 89/392/EEC der EUROPÄISCHEN
 GEMEINSCHAFT vom 14. Juni 1989, entspricht.

CE Declaration de conformité CE **F**

89/392/EEC (connue comme 'Directive Machine')
 91/368/EEC (Amendment à la 'Directive Machine')
 93/44/EEC (Amendment à la 'Directive Machine')
 97/23/EC (Défini par la directive des équipements sous
 pression)

ultrafilter, S.A.

Domicilié à Terrassa-Barcelona-Espagne, rue
 Colom II, no. 606

Déclare sous sa seule responsabilité de
 fournisseur/fabricant du produit:

Nom Model Serial-Nr

ultracool-0400SP CE E6812022-90

Objet de cette déclaration, est en conformité avec la
 Directive 89/392/EEC issue de la COMMUNAUTE
 EUROPEENNE LE 14 Juin 1989,

CE Declaración de conformidad CE **E**

89/392/EEC (Conocida como 'Directiva de maquinaria')
 91/368/EEC (Revisión de la 'Directiva de maquinaria')
 93/44/EEC (Revisión de la 'Directiva de maquinaria')
 97/23/EC (Definida por la directiva de equipos a presión)

ultrafilter, S.A.

Con sede en Terrassa-Barcelona-España, calle
 Colom II nº 606, C.P. 08228

Declara que, bajo nuestra responsabilidad como
 proveedores/fabricantes, el producto:

Name Model Serial-Nr

ultracool-0400SP CE E6812022-90

Es conforme a la Directiva 89/392/EEC establecida a
 14 de Junio de 1989 por la COMUNIDAD ECONÓMICA
 EUROPEA.

CE EC Verklaring van conformiteit **NL**

89/392/EEC (Bekend als 'machine richtlijn')
 91/368/EEC (Rectificatie van de 'machine richtlijn')
 93/44/EEC (Rectificatie van de 'machine richtlijn')
 97/23/EC (Ontworpen volgens de Pressure Equipment
 Directive - richtlijnen)

ultrafilter, S.A.

Gezeteld in Terrassa-Barcelona-Spanje, Colom II
 Straat, nr. 606, Postcode 08228

Verklaart dat onder volledig eigen verantwoordelijkheid
 voor de levering/fabricage van onderstaand product

Naam Model Serienummer

ultracool-0400SP CE E6812022-90

Waartoe deze verklaring behoort, conform is aan de
 richtlijn 89/392/EEC, uitgegeven door de EUROPESE
 GEMEENSCHAP op 14 juni 1989.

CE Dichiarazione di conformità CE **I**

89/392/EEC (conforme alla 'Direttiva Macchine')
 91/368/EEC (emendamento della 'Direttiva Macchine')
 93/44/EEC (emendamento della 'Direttiva Macchine')
 97/23/EC (Definita dalla direttiva dei recipienti a pressione)

ultrafilter, S.A.

Colom II Street, nº 606, Terrassa-Barcelona Codice
 Postale 08228

Dichiaro la responsabilità per la produzione prodotto:

Nom Model Serial-Nr

ultracool-0400SP CE E6812022-90

Il contenuto della presente relazione è in conformità con
 la Direttiva 89/392/EEC della COMUNITÀ EUROPEA
 del 14 giugno 1989.

CE EC Prohlášení o shode **CZ**

89/392/EEC (Machinery Directives)
 91/368/EEC (Machinery Directives, příloha)
 93/44/EEC (Machinery Directives, příloha)
 97/23/EC (Definováno směrnici pro tlaková zařízení)

ultrafilter, S.A.

Se sídlem Terrassa-Barcelona-Spain, Colom II Street,
 nº 606, Postal Code 08228

Z titulu své odpovědnosti výrobce a dodavatele prohlašuje
 ze toto prohlášení o shode se vztahuje k zařízení:

Typ Model Sériové číslo

ultracool-0400SP CE E6812022-90

A je plně v souladu se směrnicí Evropského
 společenství č. 89/392/EEC ze dne 14. června 1989.

CE EC Overensstemmelseserklæring **DK**

89/392/EEC (Kendt som 'Maskindirektivet')
 91/368/EEC (Tillæg til 'Maskindirektivet')
 93/44/EEC (Tillæg til 'Maskindirektivet')
 97/23/EC (Defineret af direktivet for trykluftudstyr)

ultrafilter, S.A.

Bosiddende i Terrassa-Barcelona-Spain, Colom II
 Street, nº 606, Postal code 08228

Erklærer under eneansvar for levering/fremstilling af
 produktet:

Navn Model Serienummer

ultracool-0400SP CE E6812022-90

Hvortil denne erklæring relaterer, at produktet er i
 overensstemmelse med Direktivet 89/392/EEC udstedt
 af det EUROPÆISKE FÆLLESSKAB d. 14. juni 1989.

CE EC Declarație de Conformitate **RO**

89/392/EEC (Cunoscută ca 'Directiva Construcțiilor de Masini')
 91/368/EEC (Amendament la 'Directiva Construcțiilor de Masini')
 93/44/EEC (Amendament la 'Directiva Construcțiilor de Masini')
 97/23/EC (Conform reglementărilor de utilizare a
 echipamentelor sub presiune)

ultrafilter, S.A.

Domicilié à Terrassa-Barcelona-Espagne, rue
 Colom II, no. 606

Declara pe proprie răspundere ca furnizarea/
 fabricarea produsului:

Nume Model Numar Serial

ultracool-0400SP CE E6812022-90

La care se refera aceasta declarație este in
 conformitate cu Directiva 89/392/EEC emisa de
 COMUNITATEA EUROPEANA la 14 Iunie 1989.



ultrafilter
 internacional

Energy and
 environmental technology.

Xavi Escudé Jr.
 Technical Director