ENG

INSTRUCTION MANUAL

CHILLYMAX

COMPACT WATER-CHILLER

Nr. / no. 16 05 0164 - 16 05 0165

INSTRUCTION MANUAL CHILLY MAX

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Dok-ID: V0.06 – 05.02.2015

OPERATING INSTRUCTIONS

CE

These operating instructions have to be read carefully before putting the chiller into operation.

Please observe these instructions, otherwise the manufacturers liability for subsequent damage will be cancelled. All rights required for further technical development and modification, are reserved.

IMPORTANT!

Proper use of the chiller

This chiller is designed for the cooling of water only. For the use of other agents (e.g. deionised water) please contact the manufacturer. Limits indicated in the technical data must be adhered to strictly, otherwise the manufacturers liability for subsequent damage will be cancelled. Chilling of flammable or explosive substances is prohibited.

IMPORTANT!

Please keep these operating instructions for further use!

1 SAFETY / PREVENTION OF ACCIDENTS

General information

These operating instructions contain valuable information which has to be observed during initial start-up, operation and maintenance. Therefore these instructions are to be read by the installer and operating personnel in charge, before putting the chiller into operation.

All general safety instructions mentioned in this chapter and special security instructions given in other sections of this manual have to be observed.

Personnel qualification and training

Operating, maintenance, inspection and installation personnel must be qualified. Responsibility and supervision must be clearly explained to the operator.

Danger due to non-observance of safety instructions

Non-observance of safety instructions may cause injuries, endanger the environment or damage the chiller. Non-observance of safety instructions will cancel the manufacturers liability for subsequent damage.

Safety conscious operation

The safety instructions given in these operating instructions, including national regulations on accident prevention as well as any specific chiller safety instructions must be observed.

Safety instructions for user / operator

Protective guards that have been installed to prevent contact with moving parts may not be removed when the unit is being operated. Danger resulting from the use of electrical power is excluded (for detailed information, refer to the VDE regulations and the regulations of the local power supply authorities).

Safety instructions on maintenance, inspection, and installation work

Basically none of the cleaning or maintenance tasks may be performed until the unit has come to a complete standstill. As soon as this work has been completed, all the safety devices and protective equipment must be mounted or installed according to their proper function.

Arbitrary modification and production of spare parts

The unit may be converted only if an agreement has been reached with the manufacturer. Original spare parts and accessories accepted by the manufacturer serve as safety guarantee. Use of other parts may cancel the manufacturer‘s liability for subsequent damages

1 SAFETY / PREVENTION OF ACCIDENTS

Non-permissible operating methods

The operational safety of the delivered unit is guaranteed only if the unit is properly used as intended.

Limits indicated in the technical data must not be exceed

Health hazards with the refrigerant

The refrigerant has only a very low acute health hazard. It has narcotic effects only at extremely high concentrations. After acute exposure to extremely high concentrations the substance is eliminated over the lungs very quickly. The refrigerant has a certain irritating effect on skin and mucous membranes. Exposure of the skin to liquid refrigerant can cause frost bite. In the presence of open flames or hot surfaces refrigerant can decompose and form toxic decomposition products (e.g. hydrogyn chloride, phosgene). The refrigerant evaporates when exposed to air . Intentional exposure of refrigerant is not permissible. The chiller must be handled with great care to prevent any damage occuring through transport operations.

Safety symbols

Warning!

This symbol is to be found next to all the safety instructions involving work that may result in serious injuries. Observe these instructions and proceed with extreme caution in such instances. Inform all other users as well. In addition to the instructions included in this manual, the applicable general safety and accident prevention regulations must also be taken into account.

Attention!

This symbol is to be found next to the items in this manual that must be strictly observed to ensure proper application of the guidelines, regulations, instructions and procedure of tasks and to make sure that the machine or other parts are not damaged or destroyed.

Note!

This symbol explains that chiller is designed according to state-of-the-art technology and is safe to operate. Dangerous situations may, however, be the result if the unit is used by personnel without adequate qualification or if it is not used correctly according to its intended purpose. Accordingly, this may affect efficient operation of the unit.

2 TRANSPORT

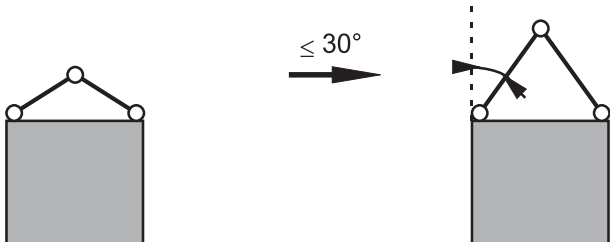
The chiller may only be transported in original packaging to the site of initial operation. In case of damage the manufacturer must be informed immediately. If the unit is moved to another location in a factory, all connections must be disconnected from the unit. Moving the unit to another location must be carried out without causing damages. If damage occurs despite these instructions, the unit must be checked by an expert and repaired as required before it is put into operation again.

Note:
The Manufacturers Liability excludes any Damage to the Chiller subsequent to Transportation.

When transporting the unit, consider the weight limits indicated in the technical data. Use a fork-lift, truck or a crane with the corresponding load-capacity.

The fully-hermetic compressor is mounted on rubber. Always transport the chiller as mentioned below. Avoid vibrations during transport. Failure to observe can result in compressor damage.

Instructions during transport!



Attention: Never remove the top cover if transporting the chiller by means of a hoist (via eyelets)!

3 INSTALLATION AND INITIAL OPERATION

Installation

Prior to installation and commissioning of the chiller, please observe the following points strictly:

The fresh air intake temperature may not exceed the max.ambient temperature (refer to name plate)

Assure that the required quantity of air is available at air cooled chillers.

Assure that the chiller hot air outlet does not warm up the environment or room excessivly.

Min.distance of fresh air intake: at least 1,0 m (air cooled version)

Min.distance of hot air outlet: at least 3,0 m (air cooled version)

Connection of an air supply and exhaust duct is admitted only for machines with radial fans.

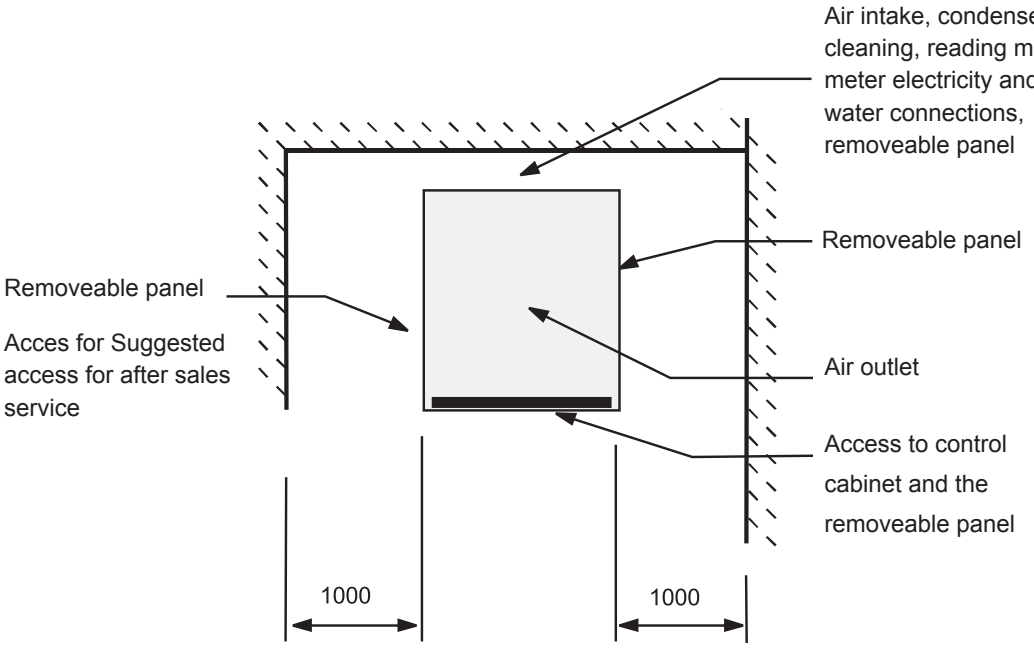
The fresh air intake of the unit (condensor) may not be situated infront of a heat rejecting device like a pump or electric motor.

The unit must be set up on level, solid surfaces only, in order to ensure the required stability. For outside erected chillers, the minimum outdoor temperature should be considered from the technical data.

Floor space

A minimum space must be left free around the installation, so that there is access to the various components and to the control cabinet.

The unit can be installed in a corner. However, its movability must be ensured to enable access to the various components.



The distance from any constructions blocking the air supply must be at a minimum distance of 1 meter.

Options

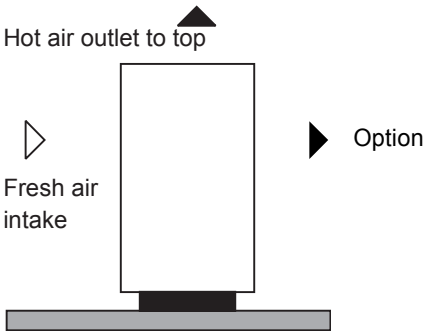
Option No 1:

The most frequent example. Air is taken in and evacuated in the same room. A large sized room is required.

Hot air outlet: min. 3 m

Fresh air intake: min.1 m

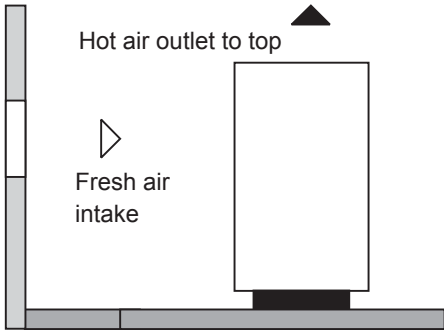
Note: The hot air outlet may not shortcycle with the fresh air intake.



Option No 2:

Air taken in from an adjoining room or from outside.If the incoming air in winter is too cold, provide a condensation pressure controller and the compressor casing resistance. A screen can be provided in winter so that taking in the cold air can however be prevented.

Note: The hot air outlet may not shortcycle with the fresh air intake.



Option No 3:

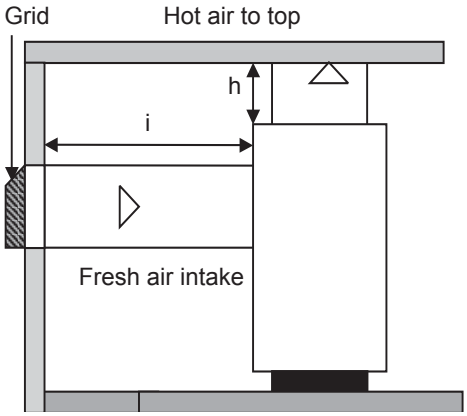
Air intake and evacuation to outside or an adjoining room using ducts.

For the maximum permissible pressure loss, note the dimensions h+i

Take the same precautions as in Option No 2 for the air intake temperatures in winter.

Note:Only permissable on chillers with radial fans.

h+i = 5 m max. with grid
h+i = 7 m max. without grid

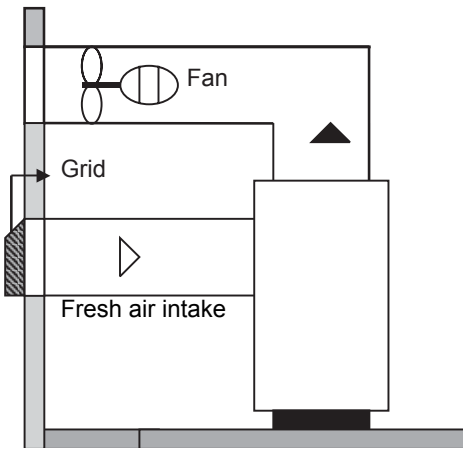


Option No 4:

Air intake and evacuation at the same floor level, either to outside or to an adjoining room.

A large bend is required in the duct so as to reduce pressure loss.

Use the same precautions as in option No 2.



3 INSTALLATION AND INITIAL OPERATION

Electrical connection

The chiller is ready for connection and should only be connected to a three phase current network (mains voltage refer to technical data).

The power supply has to be connected in a ***right handed rotatory field***. In order to confirm the correct connection the direction of rotation of the fan motor must turn in the same direction as the arrow.

All electrical connections in the switch board are to be tightened prior to commissioning.

Incorrect connection of power supply and incorrect power supply will cancel the manufacturers liability for subsequent damage.

Hydraulic connection

After completing the electrical connection it is necessary to connect the Chiller to the consumer VIA flexible or fixed pipes.

Selection of materials of pipes. PVC, Plastic, Stainless Steel, Copper and Brass are permissible.

Note: Mild Steel and Galvanized Steel is not permissible.

Selection of cross – section of pipes (for advise please refer to manufacturer).

Insulated pipes are to be used if the distance between the chiller and the consumer is greater than 5 m.

Refer to technical data (pump diagram) for flow rate and pressure available from the chiller.

Before starting up it is always necessary to prime the pump with the medium to be transported. (refer to BLEEDING OF PUMP in this chapter).

If the consumer is placed on a higher level than the chiller unit, a non-return valve has to be installed in the water outlet as well as an solenoid valve has to be installed in the water inlet.

Connect water inlet port to cnsumer return line.

Connect water outlet port to consumer inlet line.

If no cooling is required for a longer period the chiller is to be switched off to avoid possible pump damages.

Please make sure that only closed circuits are connected. When connecting several users, please make sure that unit capacity is sufficient. If cooling several users, please be sure to regulate the hydraulic settings.
When selecting pipe-work, make sure to remain within allowed pressure limitations of the users.
Install valves on each user permitting to close the water supply to it separately.

Incorrect hydraulic installation will cancel the manufacturers liability for subsequent damage.

Refilling of the tank

Manual refill

The chiller water tank can be filled through fresh water feed by a tap or directly into the tank through the top opening. To check the water level a max filling indication is integrated in the tank. Please make sure that the evaporator is always covered with water.
The level indication can only be seen when the tank is open.

Important:
Prior to filling of the tank it is esessential to test the water quality and if required carry out watertreatment (refer to chapter 7).

To avoid corrosion at the evaporator, we recommend to use water with a low salt content (chloride content < 20 mg/l). To avoid thickening of the tank water, we recommend to replace the system content every 1 to 3 months an increasing evaporation of the tank water means an increasing chloride content (please refer to chapter 7).

For chillers running at temperatures lower than freezing point, a water/glycol mixture at the appropriate ratio should be filled.

30% Glycol up to –10°C, at lower temperatures please refer to the manufacturer.

The tank should be filled to the max. level of the water level tube.

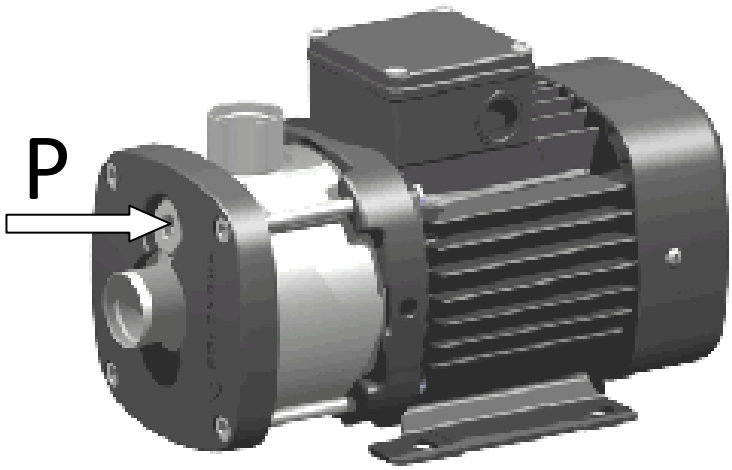
Prior to start up it is always necessary to prime the pump with the medium to be transported.

Prior to start up the pump must be bled in order to remove air from the pump.

Bleeding of the pump

Remove bleeding screw P

Reinstall bleeding screw and tighten as soon as medium exits from filler fitting.



3 INSTALLATION AND INITIAL OPERATION

Start–up of chiller

The tank water temperature should not be below -15°C for start and working period.
Optionally the unit is to keep in switched on mode.

Control switch »Standard«:

After successful completion of all instructions given in this chapter, the refrigerating plant is switched on by means of the main switch or master switch (if installed). The **OPERATION** light will light up during normal operation.

Master switch position: **O = Off** **1 = Operation**

Confirm the correct power supply connection.The direction of rotation of the fan motor must turn in the same direction as the arrow.

In case of irregularities occurring during operation or extraordinary noise, the chiller has to be switched off by means of the control switch (please contact the manufacturer).

If the FAULT light lights up or the chiller does not start at all please refer to chapter 5.

4 CARE AND MAINTENANCE

General

In case of irregularities occurring during operation or extraordinary noise, the chiller has to be switched off by means of the control or main switch.(please contact the manufacturer)

4 CARE AND MAINTENANCE

Refilling of fluid

Manual refill (option)

Ensure that the evaporator is always submerged.

Water supply

Larger volumes of fresh water supply may disturb the equilibrium of mixture or reduce concentration of antifreezing agent. The content of concentration should be checked and determined at required intervals of time.

Standstill for prolonged period

Longer standstill of chiller requires draining of tank and complete water circuit. For renewed start-up of the chiller the same steps as for the initial start-up must be considered.

Cleaning of condenser (air-cooled chillers)

Make sure that the cooling fins of the condenser remain clean in order to guarantee the required heat exchange.

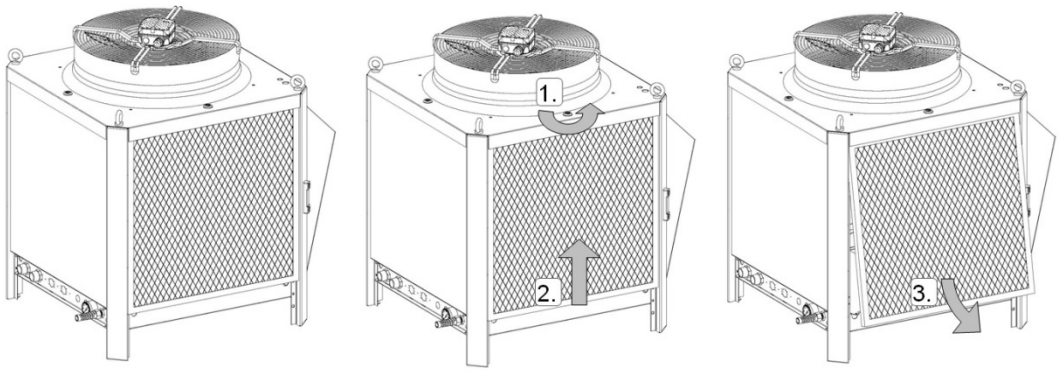
The condensor must be cleaned in monthly intervals or if required at shorter time intervals.

Dust and dirt clogging up the cooling fins should be removed by means of compressed air.

If the chiller is equipped with an air filter, the filter has to be exchanged (please contact the supplier).

If the airfilter is replaced, only make use of a EU2 filter.

Remove grid in order to change filter or/and carefully clean the condenser with compressed air.



Note:
Please ensure to switch »0« the main switch, before any maintenance or repairment work has to be performed on the chiller.

5 FAULT DIAGNOSIS

By means of the following instructions a quick failure analysis can be made. The user can repair some failures without any assistance. Please do not hesitate in phoning the manufacturers after sale service department if assistance is required.

Corrective maintenance of the refrigeration cycle must be performed by competent refrigeration specialists only. In case of any problems concerning the refrigeration cycle, please contact the manufacturer

Note:
Please ensure to switch »0« the main switch, before any maintenance or repairment work has to be performed on the chiller.

6 IMPORTANT INFORMATION ON WATER QUALITY

In order to achieve a correct and trouble-free operation on your water chiller it is necessary to examine the water quality and, when necessary, carry out water treatment. Corrosion, furring and biological problems can occur in the water system.

The following information is important for the assessment of a half-open system:

- water quality
- all materials having contact with the cooling water
- max. and min. system water temperature
- requirements for water quality

1. Deionized / Demineralized / Destilled / Return Osmosis water

When using deionized, demineralized, destilled or return osmosis water it is required to add a corrosion inhibitor or glycol to the water system.

2. Fresh water/ City water / Tap water

When using fresh water, city water or tap water it is recommended to analyse the water by a specialist to minimize the risk of any chiller damage through a high chloride content. A high chloride content (>20mg/l) in the system water can cause corrosion on the stainless steel evaporator.

It is required to make use of a corrosion inhibitor as additive to the system water. We recommend the use of ***Nalco 77382 at a concentration of 5g/l in the complete water system***, unless an Inhibitor with similar characteristics is prescribed from the manufacturer.

Organic sediments and algae in the water cycle can be controlled by analysing the number of organic germs. If the number of organic germs exceeds 1000 KBE/ml, we recommend to use ***Biozid Nalco 77352 at a concentration of 100mg/l***. After 3 to 4 days it is recommended to exchange the complete system water. The chiller can operate during this period.

Evaporation leads to a concentration of minerals and chloride in the system water, especially at the surface level. The water parameters which are initially below the guide values, can increase to exceed the guideline value as a result of the evaporation. An excessive chloride content in the system water will cause corrosion on the stainless steel evaporators and stainless steel tank. We therefore recommend to regularly monitor the water quality and if necessary drain the concentrated water from the system in order to rematch the water values to the parameters as per guideline. It is recommended to exchange the water at least once or more times per year and to inspect the evaporators on regular intervals.

Water quality parameters:

Pure, clear water without solids.

ph-value:	7-9	alkality (°dH):	<1
conductivity:	<300 µS/cm	chloride content:	<20 mg/L
hardness (°dH):	7,5°dH – 8,5°	organic germs:	<1000 KBE/ml

For any further questions please contact the water specialist (S. 18)

Ignorance of the above information cancels the Manufacturers liability for subsequent damage.

6 IMPORTANT INFORMATION ON WATER QUALITY

For assistance regarding watertreatment please contact:

GERMANY
Nalco Deutschland GmbH
Ludwig-Landmann-Strasse 405
D-60486 Frankfurt am Main
Phone: 069-793-40
Fax: 069-793-4295

FRANCE
Nalco
N°5 rue Rosa Bonheur
F-59290 Wasquehal
Phone: 03 20 11 70 00
Fax: 03 20 11 70 70

EUROPE
Nalco European Operations
2342 BV Oegstgeest
P.O. Box 627, NL-2300 Leiden, The Netherlands
Phone: 31-71-524-1100
Fax: 31-71-524-1197

USA
Nalco Company
Nalco Center
1601 W. Diehl Road
Naperville, IL 60563-1198 U.S.A.
Phone: 630-305-1000
Fax: 630-305-2900

SOUTH AMERICA
Nalco Latin America Operations
Av. Das Nacoes Unidas
17.891, 11o, Andar
Santo Amaro 04795-100
Sao Paulo, Brazil
Phone: 55-11-5644-6500
Fax: 55-11-5641-7687

ASIA
2 International Business
2-20 The Stategy Tower 2
Singapore 609930
Phone: 0065 (0) 68 61 40 11
Fax: 0065 (0) 68 61 40 11

7 Waste disposal

The refrigerant cycle of the chiller contains an enviroment friendly refrigeration fluid. Only registered and qualified refrigeration companies are permissible to carry out work on the chiller. Before attending any repairments or maintanance work on the refrigeration cycle the refrigerant must be recovered by means of a recovery unit. Any intention blowing off the refrigerant is prohibited. Disposal of the refrigerant and any other parts like compressor oil or waste water must be completed according to local regulations only.

Specifi cation subject to change.

FOR YOUR NOTICE

Bei niedriger Wassertemperatur empfehlen wir ein Wasser-Glykolgemisch mit einem Glykolanteil von min. 20% (siehe Tabelle). Konzentrationen unter 20% Glykol können korrosionsfördernd wirken. Bei Glykolzusatz, max. 34%, verringert sich die Kälteleistung bis zu 15%.

If the water temperature is low, you have to use minimum 20 % glycol in the water tank, see table. Concentration below 20% of glycol may force corrosion. If glycol addition, max. 34%, the cooling capacity drops up to 15%.

Si la temperature d'eau est basse, utiliser au minimum 20 % de glycol dans l'eau du bac, voir tableau. Un taux de glycol inferieur à 20% pourrait entrainer l'apparition de corrosion. Un taux de glycol plus élevé, et au maximum de 34%, entraine une chute de la capacité de refroidissement juqu'à 15%.

Wassertemperatur/Water temperature/Temperature d'eau	***Glykolanteil/Glycol concentration/Volume glycol***
10°C→0°C	**20%**
<0°C→-5°C	**27%**
<-5°C→-10°C	**34%**

Konformitätserklärung
Declaration of Conformity
Declaration de Conformite

Hersteller: Manufacturer: Fabricant:	WTG-QUANTOR GmbH Europa-Allee 53 D-54343 Föhren	
Produktbezeichnung: Product description: Descriptions produits	Chilly Max 50	- Kühlanlage zur Rückkühlung von Flüssigkeiten - Chiller - Refroidisseur
Seriennummer: Serial number: Numéro de série:	16 05 0164 - 16 05 0165	

Hiermit erklären wir, dass nachfolgend genannte Produkte aufgrund ihrer Konzeption, Konstruktion und Bauart in der von uns in Verkehr gebrachten Ausführung den grundlegenden Sicherheitsanforderungen der nachstehend genannten Richtlinien einschließlich der zum Zeitpunkt der Erklärung geltenden Änderungen entsprechen.

Einschlägige EG-Richtlinien:
- EG-Maschinenrichtlinie 2006/42/EG
- EG-EMV Richtlinie 2014/30/EU

Angewandte harmonisierte Normen:
- DIN EN ISO 12100:2011-03; Sicherheit von Maschinen, Allgemeine Anforderungen
- DIN EN 60204-1:2007-06; Sicherheit von Maschinen, elektrische Ausrüstung von Maschinen
- DIN EN 378-1 bis -4:2012-08, Kälteanlagen und Wärmepumpen - Sicherheitstechnische und umweltrelevante Anforderungen

We herewith confirm that the following products based upon their construction as well as their distributed version meets the relevant basic security and health requirements of the EC directives below referenced, including any alterations made at the time of the declaration.

Applied machine Directives:
- EC- Machine Directive 2006/42/EG
- EC- EMV Directive 2014/30/EU

Applied harmonized Standard:
- DIN EN ISO 12100:2011-03: Safety of machines, General requirements.
- DIN EN 60204-1:2007-06;Safety of machines, Electrical Equipment of machines
- DIN EN 378-1 to -4:2012-08, Refrigeration and Heat pump systems – safety and environmental requirements. Requirements

Par la présente nous déclarons que les produits suivants de part leur fabrication et de part leur distribution sont conformes aux exigences essentielles de sécurité et de santé des directives CE ci-dessous référencés, incluant leurs avenants publiés à ce jour.

Directives CE Appliquées:
- EC- Directive Machine 2006/42/EG
- EC- Directive CEM 2014/30/EU

Standards Harmonisés Appliqués:
- DIN EN ISO 12100:2011-03; Sécurité des machines, exigences générales.
- DIN EN 60204-1:2007-06; Sécurité machines, équipements électriques des machines
- DIN EN 378-1 à -4:2012-08, Systèmes de Réfrigération et Pompes à Chaleur – Sécurité et exigences environnementales

Föhren, 01.02.2016

Markus Milz

Managing Director

(Bevollmächtigte Person zur Zusammenstellung der technischen Unterlagen und zur Ausstellung dieser Erklärung)
(Authorized person for technical documentation and for issuing this clarification)
(Personne autorisée pour la documentation technique et pour publier le présent declaration)

T E C H N I C A L D A T A S H E E T

Kühlwasser-Rückkühler
Typ: Chilly Max-50-M/USA

1. GENERAL DATA

Refrigerant gas:		R410A			
Specifications:					
Nominal ambient air:	°C	37			
Coolant temperature:	°C	10	15	20	
Cooling Capacity:	W	4670	6400	7330	
Min ambient air:	°C	10			
Max ambient air:	°C	37			
Min coolant temperature:	°C	-10			
Max coolant temperature:	°C	25			
Evaporator material:		Copper			
Temperature control:		electronic, direct			
Temperature display:		digital			
Control voltage:		24V AC			
Main Power supply:		3/PE/60Hz 230V +-10%			
Total absorbed power:	kW				max: 5.2
Full load current:	A				max: 17.8
Safety fuse protection:	A	20.00			
Paint:					
Cabinet structure:		stainless steel, not painted			

2. AIR CONDENSER:

air cooled, axial

Nominal Air Flow:	m³/h	3300.00			
Number of fan:	Unit	1			
Nom Absorbed power:	kW	0.89			
Starting current:	A	3.92			

3. COMPRESSOR:

full hermetic (dome)

Number:	Unit	1			
Technology:		direct			
Total absorbed power:	kW	5.00	5.20	5.30	max: 3.30
Full load current:	A	8.90	9.20	9.30	max: 10.20

4. Heater:

Number:	Unit	1
Nominal power of the heater:	kW	3.00
Nominal stream of the heater:	A	7.60

5. PUMP:

First PUMP:		horizontal centrifugal pump
Type:		CM1-4
Number:	Unit	1
Total absorbed power:	kW	0.74
Full load current:	A	3.40
Nominal flow rate:	m^3/h	1.20
Nominal pressure rate:	bar	3.30

6. LIQUID TANK:

stainless steel insolated

Volume:	l	30.00
Outlet / inlet connections:	Inch	IG 3/4

7. WEIGHT AND PHYSICAL SIZE:

Length:	mm	715
Width:	mm	820
Height:	mm	975
Weight :	kg	135

Operating concept Eliwell ‚FREE SMART‘

Operating display

1. Switching on/off:

   Press and hold the **esc** key (> 3 seconds) to switch from the operating status “Off” to “On” and vice versa.

   In the operating status “Off”, the display shows **Off**; this symbol lights up in the operating status “On”: ⏻

2. Pump inching mode:

   The pump can be operated in inching mode in the operating status “Off”.
   If you press and hold the **“Down”** key for more than 3 seconds, the pump starts and continues to operate until the key is released.

3. Normal display:
   The **ACTUAL value** is displayed.

4. Adjusting the setpoint:

   With fixed value control (absolute):

Briefly press **set** 1x	⇒	**SEt** appears on the display
Briefly press **set** 1x	⇒	**St1** (Cooling setpoint) appears on the display
Briefly press **set** 1x	⇒	The setpoint appears on the display and can be changed with the **"Up"** and **"Down"** keys The setpoint is confirmed with **set**. The display returns to **St1**
Briefly press **esc** 2x	⇒	The controller returns to the normal display

Briefly press **set** 1x	⇒	**SEt** appears on the display
Briefly press **set** 1x	⇒	**St1** (Cooling setpoint) appears on the display
Briefly press **"Down"** 1x	⇒	**St2** (Heating setpoint) appears on the display
Briefly press **set** 1x	⇒	The setpoint appears on the display and can be changed with the **"Up"** and **"Down"** keys The setpoint is confirmed with **set**. The display returns to **St2**
Briefly press esc 2x	⇒	The controller returns to the normal display

5. Optional functions

   Switching between heating and cooling

Press and hold **"Up"** 1x	⇒	☼ lights up on the display, the system is in heating mode
Press and hold **"Down"** 1x	⇒	❄ lights up on the display, the system is in cooling mode

6. Clear errors:
   Press **"Up" + "Down"** at the same time

Elektrodokumentation
Electrical documentation

Anlagenbezeichnung Plant designation	Chilly MAX 50-M/USA
Zeichnungsnummer Job number	E0020220

Hersteller (Firma) **Manufacturer (company)**	
Einspeisung **Power supply**	230 V +-10%
Frequenz **Frequency**	60 Hz
Steuerspannung **Control voltage**	24 V AC
Leistungsaufnahme **Power consumption**	5,2kW
Stromaufnahme **Current input**	17,8 A
Maximale Vorsicherung **Safety Fuse**	20 A

Verdrahtung
Wiring

Einspeisung **Power supply**	Schwarz Black
Steuerspannung **Control voltage**	Rot Red
Potentialfreie Störmeldung **potential free fault signal**	Orange Orange
Digitaleingang **Digital input**	Violett Violet
PE	Grün/Gelb Green/Yellow

Bearbeitet am
Edit date 13.05.2016

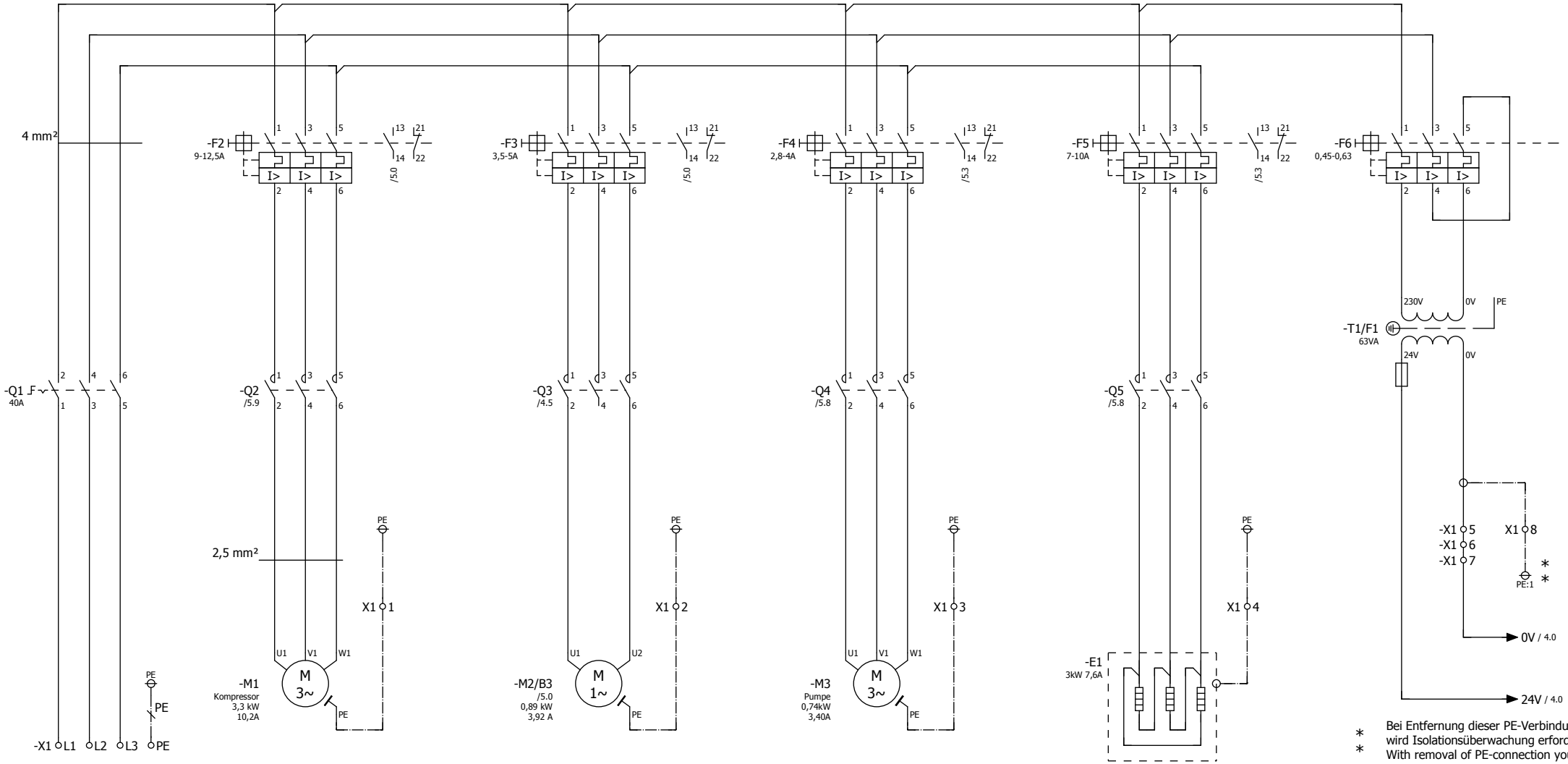
von (Kürzel)
by (short name) Rausch

Inhaltsverzeichnis
Table of contents

Spalte X: eine automatisch erzeugte Seite wurde manuell nachbearbeitet

			Datum	29.03.2016	Chilly MAX 50-M/USA		Inhaltsverzeichnis Table of contents		=
			Bearb.	Rausch					+
			Gepr	Kallscheid				E0020220	Blatt 2
Änderung	Datum	Name	Urspr		Ersatz von	Ersetzt durch			Blatt 9

Sämtliche Leitungen ohne besondere Querschnitts-angabe sind H07V-K 1,5mm ²
all cables without numbers are H07V-K 1,5mm ²



* Bei Entfernung dieser PE-Verbindung wird Isolationsüberwachung erforderlich
* With removal of PE-connection you need an isolation control

Kompressor
Compressor

Lüfter
Fan

Pumpe
Pump

Heizung
Heating

			Datum	13.05.2016	Chilly MAX 50-M/USA		Laststromkreise Main circuit	=
			Bearb.	Rausch				+
			Gepr	Kallscheid			E0020220	Blatt 3
Änderung	Datum	Name	Urspr		Ersatz von	Ersetzt durch		Blatt 9

Sämtliche Leitungen ohne besondere Querschnitts-angabe sind H05V-K 1,0mm ²
all cables without numbers are H05V-K 1,0mm ²

3.9 / 24V

24V / 5.0

-X1 9
bk
-F7
>42 bar
bk
-X1 10

a / 5.8

Kompressor
Compressor
-Q2
/5.9
13
14

-K2
A1' A2' 12' 11' 14'
A2
A1
12 NC
11 COM
14 NO
b / 5.0
c / 5.2
TRS 24VUC 1CO
Weidmüller

-Q3
A1
A2

3.9 / 0V

0V / 5.0

1 2 /3.3
3 4 /3.3
5 6 /3.3
13 14

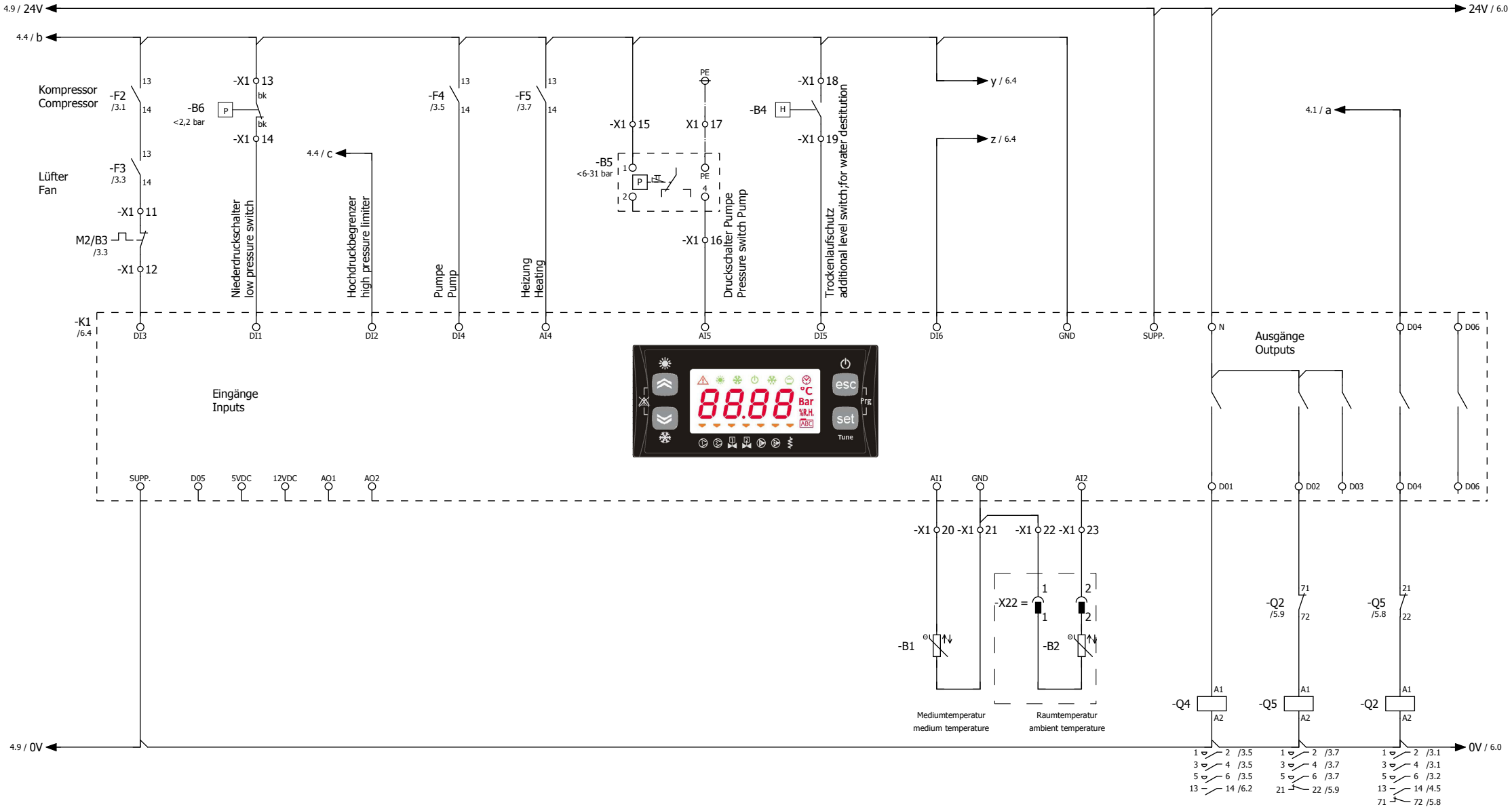
Hochdruckbegrenzer
high pressure limiter

Pumpe
Pump

5

			Datum	29.03.2016	Chilly MAX 50-M/USA		Steuerstromkreise Control circuit	=	
			Bearb.	Rausch				+	
			Gepr	Kallscheid					
Änderung	Datum	Name	Urspr		Ersatz von	Ersetzt durch		E0020220	Blatt 4 Blatt 9

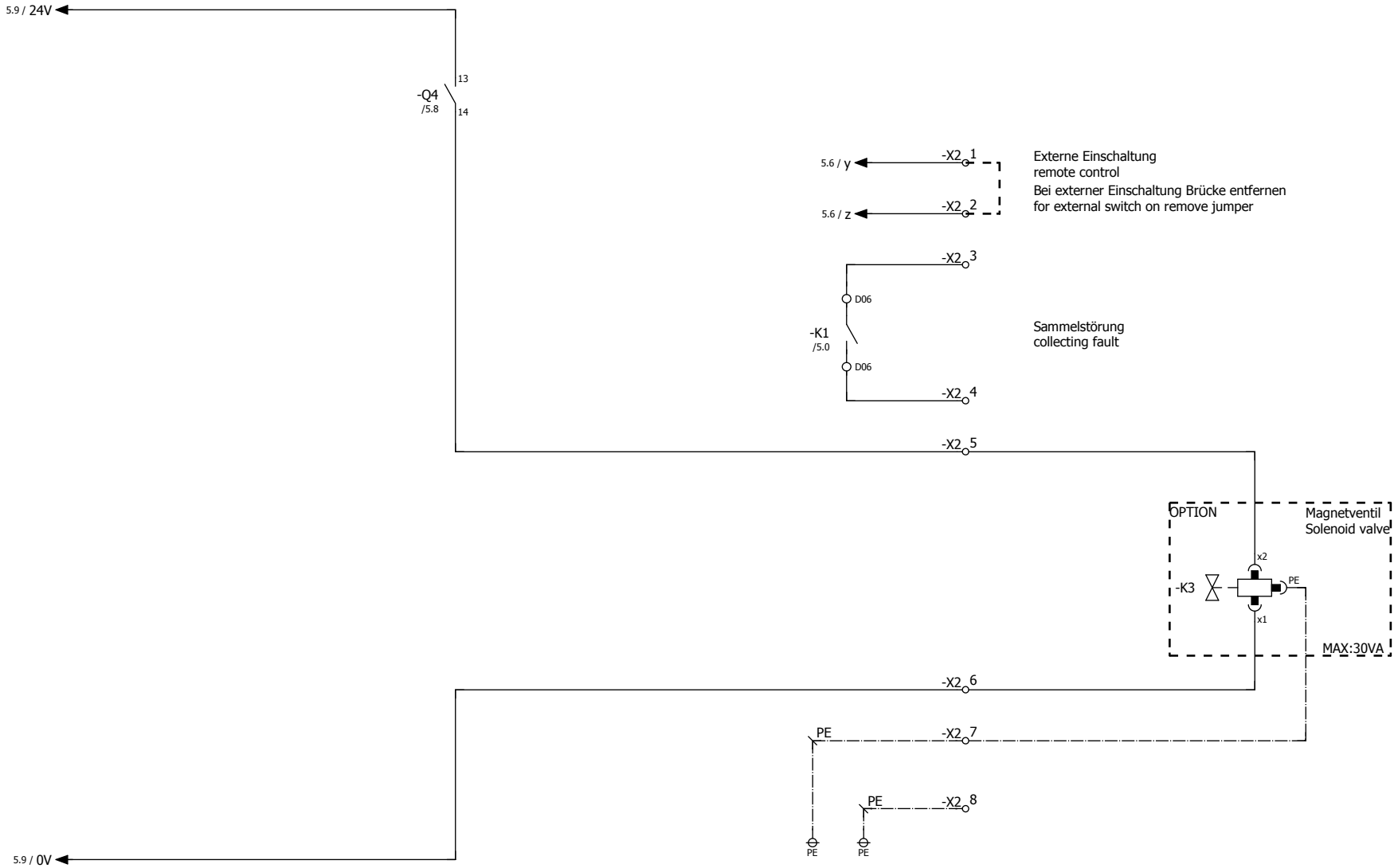
Sämtliche Leitungen ohne besondere Querschnitts-angabe sind H05V-K 1,0mm ²
all cables without numbers are H05V-K 1,0mm ²



6

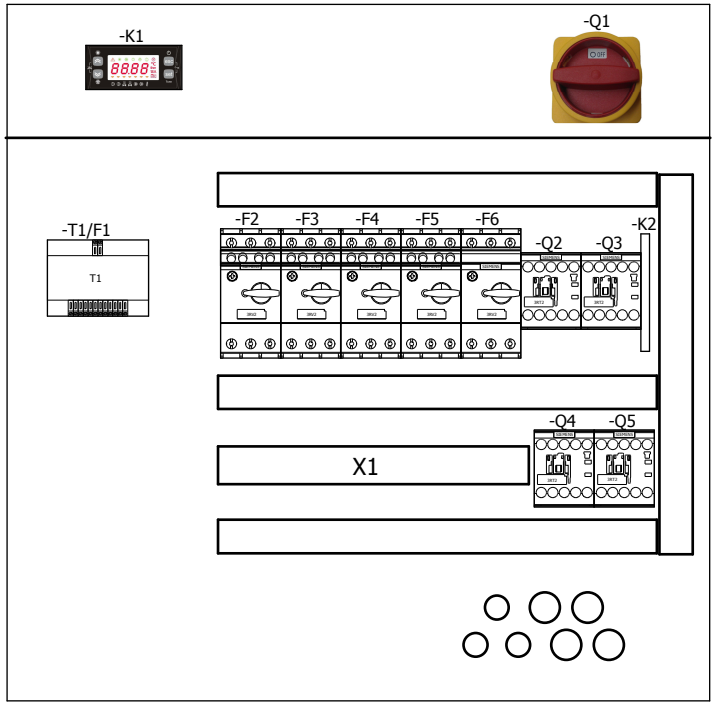
			Datum	29.03.2016	Chilly MAX 50-M/USA		Steuerstromkreise Control circuit	=	
			Bearb.	Rausch				+	
			Gepr	Kallscheid				E0020220	Blatt 5
Änderung	Datum	Name	Urspr		Ersatz von	Ersetzt durch			Blatt 9

Sämtliche Leitungen ohne besondere Querschnitts-angabe sind H05V-K 1,0mm ²
all cables without numbers are H05V-K 1,0mm ²



			Datum	29.03.2016	Chilly MAX 50-M/USA		Steuerstromkreise Control circuit	=	
			Bearb.	Rausch				+	
			Gepr	Kallscheid				E0020220	Blatt 6
Änderung	Datum	Name	Urspr		Ersatz von	Ersetzt durch			Blatt 9

Montageplatte
Mounting panel



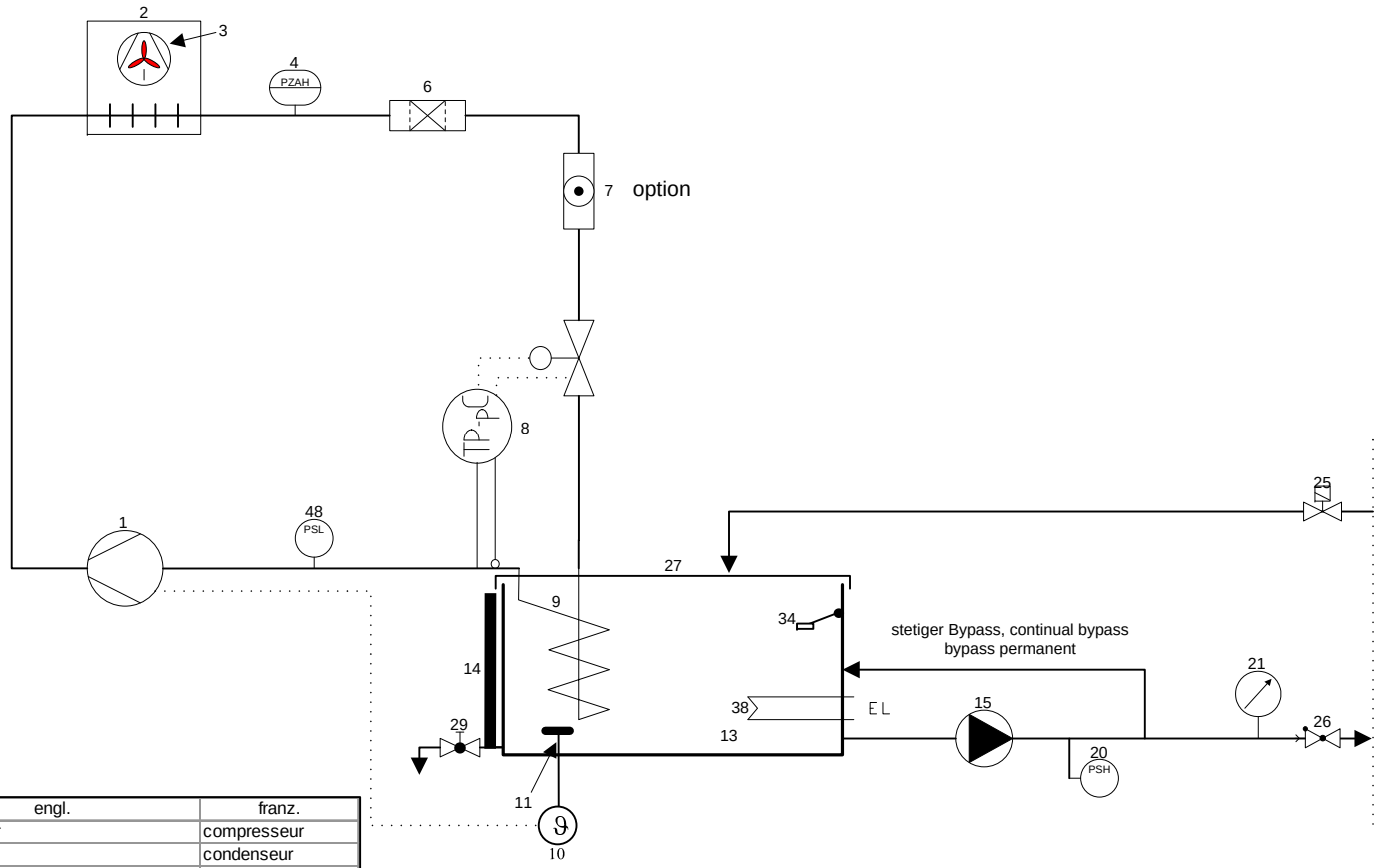
			Datum	29.03.2016	Chilly MAX 50-M/USA		Aufbauplan Panel layout		=
			Bearb.	Rausch					+
			Gepr	Kallscheid				E0020220	Blatt 7
Änderung	Datum	Name	Urspr		Ersatz von	Ersetzt durch			Blatt 9

Artikelstückliste
Parts list

BMK DT	Bezeichnung designation	Typnummer Type number	Hersteller Manufacturer	Artikelnummer part number
-B1	NTC, 1,5m	SN8T6A1502	Carrel	56162
-B2	NTC, 3,0m NTC, 3,0m	NTC 030WP00	Carrel	10197
-B4	Schwimmerschalter, Schließer Float switch, NO contact	NIG-A-G.3/8"Viton,PP,49/15	ELOBAU GmbH+Co KG	37206
-B5	Druckschalter -0,5-8bar	PS1 A 8 R	EMERSON	11042
-B6	Druckschalter <2,2 bar pressure switch <2,2 bar	ACB-2UA892W	Danfoss	39706
-E1	Heizung Heating	EHK 403C 3kW	Loval Oy	10188
-F2	LEISTUNGSSCHALTER BGR. S00, FUER DEN MOTORSCHUTZ, CLASS 10 CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10	3RV2011-1KA10	Siemens AG	44709
-F2	HILFSSCHALTER QUERLIEGEND, 1S+1OE, SCHRAUBANSCHLUSS TRANSVERSE AUX. SWITCH, 1NO+1NC, SCREW CONNECTION	3RV2901-1E	Siemens AG	44718
-F3	LEISTUNGSSCHALTER BGR. S00, FUER DEN MOTORSCHUTZ, CLASS 10 CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10	3RV2011-1FA10	Siemens AG	44705
-F3	HILFSSCHALTER QUERLIEGEND, 1S+1OE, SCHRAUBANSCHLUSS TRANSVERSE AUX. SWITCH, 1NO+1NC, SCREW CONNECTION	3RV2901-1E	Siemens AG	44718
-F4	LEISTUNGSSCHALTER BGR. S00, FUER DEN MOTORSCHUTZ, CLASS 10 CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10	3RV2011-1EA10	Siemens AG	44704
-F4	HILFSSCHALTER QUERLIEGEND, 1S+1OE, SCHRAUBANSCHLUSS TRANSVERSE AUX. SWITCH, 1NO+1NC, SCREW CONNECTION	3RV2901-1E	Siemens AG	44718
-F5	LEISTUNGSSCHALTER BGR. S00, FUER DEN MOTORSCHUTZ, CLASS 10 CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10	3RV2011-1JA10	Siemens AG	44708
-F5	HILFSSCHALTER QUERLIEGEND, 1S+1OE, SCHRAUBANSCHLUSS TRANSVERSE AUX. SWITCH, 1NO+1NC, SCREW CONNECTION	3RV2901-1E	Siemens AG	44718
-F6	LEISTUNGSSCHALTER BGR. S00, FUER DEN MOTORSCHUTZ, CLASS 10 CIRCUIT-BREAKER SZ S00, FOR MOTOR PROTECTION, CLASS 10	3RV2011-0GA10	Siemens AG	44696
-F7	Druckschalter >42bar Pressure switch >42bar	ACB-2UB1136MW	Danfoss	38623
-K1	Regler SMP5500000401 regulator SMP5500000401	FREE SMP5500S	Eliwell	55059
-K1	Verbindungs-Stück Connector	COLV0000E0201	Eliwell	55232

Artikelstückliste
Parts list

BMK DT	Bezeichnung designation	Typnummer Type number	Hersteller Manufacturer	Artikelnummer part number
-K2	Relaiskoppler Relay module	TRS 24VUC 1CO	Weidmüller	58534
-M1	Kompressor Compressor	HRH 029 U2L P6	Danfoss	48123
-M2/B3	Lüfter Fan	A4E500AE0305	ebm-papst	65336
-M3	Pumpe Pump	CM1-4 A-R-A-V AQQV O-A-A-N	Grundfoss	50947
-Q1	Hauptschalter Main switch	ML1-040-E-1550-HS-ZB1293	Merz Schaltgeräte	63867
-Q2	SCHUETZ, AC-3, 7,5KW/400V, 1S, AC 24V, 50/60 HZ CONTACTOR, AC-3, 7.5KW/400V, 1NO	3RT2018-1AB01	Siemens AG	44725
-Q2	HILFSSCHALTERBLOCK , 1OE STROMBAHNEN: 1OE, AUX. SWITCH BLOCK , 1NC COND. PATHS: 1NC,	3RH2911-1AA01	Siemens AG	44743
-Q3	SCHUETZ, AC-3, 4KW/400V, 1S, AC 24V, 50/60 HZ CONTACTOR, AC-3, 4KW/400V, 1NO, AC 24V, 50/60 HZ	3RT2016-1AB01	Siemens AG	44721
-Q4	SCHUETZ, AC-3, 4KW/400V, 1S, AC 24V, 50/60 HZ CONTACTOR, AC-3, 4KW/400V, 1NO, AC 24V, 50/60 HZ	3RT2016-1AB01	Siemens AG	44721
-Q5	SCHUETZ, AC-3, 4KW/400V, 1OE, AC 24V, 50/60 HZ CONTACTOR, AC-3, 4KW/400V, 1NC, AC 24V, 50/60 HZ	3RT2016-1AB02	Siemens AG	44722
-T1/F1	Transformator Transformer	230/24V, AC, 63VA	TEK	14837
-X22	Winkliges Anbaugehäuse Bulkhead mounting, angled	09 20 003 2711	Harting	15682
-X22	Buchseneinsatz, 3-polig + PE Female insert, 3-pole + PE	09 20 003 2711	Harting	15683
-X22	Stifteinsatz, 3-polig + PE Male insert, 3-pole + PE	09 20 003 2611	Harting	28387
-X22	Tüllengehäuse Hood	19 20 003 1440	Harting	28388



Nr.	dt.	engl.	franz.
1	Kompressor	compressor	compresseur
2	Verflüssiger	condenser	condenseur
3	Lüfter	fan	ventilateur
4	HD- Pressostat	hp- switch	pressostat HP
6	Trockner	drier	déshydrateur
7	Schauglas	sight glass	voyant liquide
8	Expansionsventil	expansion valve	détendeur
9	Verdampfer	evaporator	évaporateur
10	Thermostat	thermostat	thermostat
11	Fühler	sensor	sonde
13	Tank	tank	bac
14	Füllstandsanzeige	fluid level indicator	niveau visuel
15	Pumpe	pump	pompe
20	Druckschalter	hp- controller	pressostat hp
21	Manometer	manometer	manométre
25	Magnetventil	solenoid valve	électro- vanne
26	Rückschlagventil	non return valve	clapet anti- retour
27	Tankabdeckung	tank cover	couvercle de bac
29	Kugelhahn/ Tankentleerung	hand shut off valve- ball/ tank drain	robinet de vidange
34	Schwimmerschalter	float switch	controleur niveau
38	Heizung	heater	chauffage
48	Druckschalter	lp- controller	pressostat BP

Fließschema/ hydraulic schema/ schéma hydraulique

Type: Chilly MAX-M 50, 90, 110

bearbeitet	geprüft		ZEICHN. NR.
D.Bruchhof	**A.Wiebe**		**F4343**
DATUM	DATUM		Blatt
22.03.2016	**22.03.2016**		**1 von 1**

INSTRUCTION MANUAL CHILLY MAX

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