Installation and Operating Instructions

For the specialist

Ceiling unit Tecto Refrigo
CMC1
CMF1

5471970 01-2020

Please save!
Subject to technical changes!

Contents

1 User Guide

All important information for operation and installation is summarized in the Installation and Operating Instructions.

Read the Installation and Operating Instructions completely and use the product only after you have first understood the Installation and Operating Instructions.

If you have any questions, please contact your Viessmann specialist partner. You will find the current address on the back page.

1.1 Target group

These instructions are aimed exclusively at authorized specialists.

➲ Electrical work to be performed exclusively by qualified electricians.

➲ Initial commissioning to be be performed exclusively by the manufacturer or by a specialist designated and authorized by the manufacturer.

1.2 Structure of the Installation and Operating Instructions

1.2.1 Warnings

Structure of the warnings

Warnings are structured as follows:

⚠ SIGNAL WORD!	**Source of danger!** Consequences of non-compliance. ► Measure to avoid the danger.

Gradation of the warnings

Warnings differ according to the type of danger as follows:

⚠ DANGER!	Warns against an imminent threat of danger, which will lead to death or serious injuries if it is not avoided.
⚠ WARNING!	Warns against a possibly dangerous situation, which will lead to death or serious injuries if it is not avoided
⚠ CAUTION!	Warns against a possibly dangerous situation, which will lead to moderate or minor injuries if it is not avoided.
NOTE	Warns against a possibly dangerous situation, which will lead to damage to property or the environment if it is not avoided.

Tips, notes, and recommendations

ⓘ *Gives the user tips, notes, or recommendations on using the product efficiently.*

1.2.2 Additional symbols

Handling instructions

Handling instructions ask you to carry out an operation or a work step. Handling instructions should always be carried out individually and in the specified sequence.

Structure of the handling instructions:

➲ Instructions for an operation.

Results if required.

Lists

Structure of the unnumbered lists:

- List level 1
  - List level 2

Structure of the numbered lists:

1. List level 1

1.1 List level 2

1.3 Related documents

Please observe the safe and correct use of the device, including the additional documents provided (e.g., Installation and Operating Instructions, Operating Manual) and relevant standards and laws.

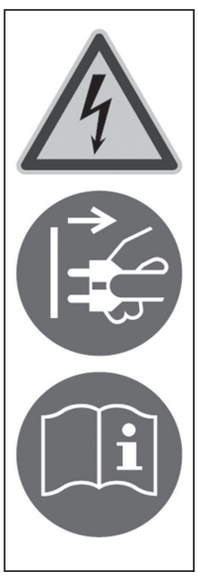
1.4 Safekeeping

Keep the Installation and Operating Instructions, including the related documents, handy in the vicinity of the device.

1.5 Symbols on the product

Warning

- Warns against electric voltage
- Gives instructions for pulling the power plug before opening the housing.
- Requests reading the Installation and Operating Instructions.
- Attached to the side panel where the power cable is fed.



2 Safety and Dangers

⚠ DANGER!	**Risk of death due to electric shock!** ► Before you begin any work on the ceiling unit disconnect the power plug. ► Observe the applicable national standards for working on electronic devices.

⚠ DANGER!	**Risk of death due to falling ceiling unit!** ► Ensure sufficient load transfer, especially for commissioning, service, and other inspections. ► Make ceiling cutout for ceiling unit as per drawing see section „20 Drawings for ceiling cutout and drill holes“ on page 26. ► Test the load-bearing capacity of the ceiling of the refrigeration cell in individual cases.

NOTE	**Damage due to incorrect temperature range!** ► Ensure that ceiling unit is operated exclusively in the prescribed temperature range.

NOTE	**Damage due to a lack of instruction!** ► Ensure that only trained qualified personnel carry out work on the ceiling unit.

NOTE	**Damage due to a defective device!** ► Ensure that only trained qualified personnel operate the ceiling unit. ► Use ceiling unit exclusively in original condition without unauthorized modifications and in technically perfect condition.

➲ Follow Installation and Operating Instructions.

➲ Have maintenance, cleaning, and repair work performed exclusively by specialists who are familiar with the applicable national standards.

3 Intended Use

Use ceiling unit exclusively for cooling enclosed spaces at an ambient temperature in the range of +10 °C to +42 °C.

Use ceiling unit exclusively for commercial purpose.

Adhere to information about installation conditions (see section „6.2.3 Installation conditions“ on page 6).

Standard refrigeration units serve to cool spaces in which goods are stored at -5° C to +20° C.

Freezer units serve to cool spaces in which goods are stored at -25° C to -5° C.

4 Foreseeable misuse

Operate ceiling unit exclusively between approved operating points (see section „14 Technical data“ on page 14). The device should not be operated outdoors.

5 Product designation

Standard refrigeration units: CMC 0700, CMC 0900, CMC 1300, CMC 1900, CMC 3300, CMC 4200

Freezer units: CMF 0800, CMF 1100, CMF 1300, CMF 1700, CMF 2900, CMF 4100

Refrigeration capacity is specified at full 100W.

The abbreviations in the product designations stand for:

CM = Ceiling Monobloc

C = Cooler

F = Freezer

6 Installation

6.1 Transport

Transport ceiling unit as follows:

- ➲ Transport exclusively in position of use.
- ➲ Do not tilt ceiling unit.
- ➲ Comply with symbols on the packaging.
- ➲ Lift and transport unit exclusively at the base of the machine.
- ➲ Ensure that the evaporator and condenser are not damaged.

6.2 Installation

6.2.1 Scope of delivery

The delivery includes:

- Fan box with frame panels (variations depending on the selected cell wall thickness)
- Insulation cover
- Machine part with remote control

ⓘ *Viessmann Kühlsysteme GmbH delivers the ceiling unit ready to be plugged in, i.e., ready to operate with power supply cable including plug*

6.2.2 Unpacking

NOTE	**Damage due to tilting the ceiling unit!**
	► Ensure that the ceiling unit is not tilted.

Before and during the unpacking:

- ➲ Comply with the safety and environmental regulations at the installation site.
- ➲ Check ceiling unit for transport damages with a visual inspection.
- ➲ Document defects (e.g., with photos) and report them to the manufacturer, specifying manufacturing information and model designation. Pay attention to loose parts, dents, and scratches as well as visible loss of oil.
- ➲ Lift ceiling unit exclusively at the base of the machine.
- ➲ Do not lift ceiling unit at the evaporator.
- ➲ Lift fan box exclusively at the circumferential mounting plate.
- ➲ Ensure that the evaporator and condenser are not damaged.
- ➲ Dispose of packaging material in an environmentally compatible way according to local regulations.

6.2.3 Installation conditions

NOTE	**Damage due to installation outdoors!**
	► Install ceiling units exclusively in enclosed spaces..

Requirements for installation space

- ➲ Comply with ambient temperature from +10° C to +42° C.
- ➲ Do not exceed humidity (non-condensing humidity) of 85%.
- ➲ Maintain distance of 600 mm from all intake openings in order to ensure the unimpeded intake of the ceiling unit.
- ➲ Maintain distance of 750 mm from all exhaust openings in order to ensure the unimpeded exhaust of the ceiling unit.
- ➲ At least 100 mm gap from the top edge of the ceiling unit to the bottom edge of the exiting ceiling.
- ➲ If distances cannot be maintained:
  - Have refrigeration specialist company properly plan necessary air ducts.
  - Ensure airflow with appropriate measures (e.g., air baffles, additional fans).
- ➲ Purge generated heat from the installation room.
- ➲ Avoid direct heat radiation.
- ➲ Avoid the ingress of warm, moist air into the cold room
- ➲ Exclude installation in areas with magnetic interference pulses that have an impact on the functioning of the ceiling unit.
- ➲ Exclude installation in an explosive environment.

➲ Exclude installation in business premises subject to potential fire hazards (see nationally applicable standards and local regulations).

➲ Comply with local regulations for installation, operation, maintenance, and disposal.

6.3 Montage

⚠ CAUTION!	**Risk of injury due to missing equipment!**
	▶ Use personal protective equipment.
	▶ Ensure that personal protective equipment is properly put on and tools are used correctly.

6.3.1 Before installation

➲ Ensure that at least 600 mm of open space in front of air intake opening and 750 mm open space in front of exhaust opening of the ceiling unit are assured.

➲ Follow dimensional drawings, see section „19 Dimensional drawings“ on page 23.

➲ Follow drawings, see section „20 Drawings for ceiling cutout and drill holes“ on page 26.

Sawing out ceiling cutout

Mark and saw out ceiling cutout as follows:

➲ Mark and punch marking points according to the drawing see section „20 Drawings for ceiling cutout and drill holes“ on page 26:
- Holes for fan box
- Corners of the ceiling cutout

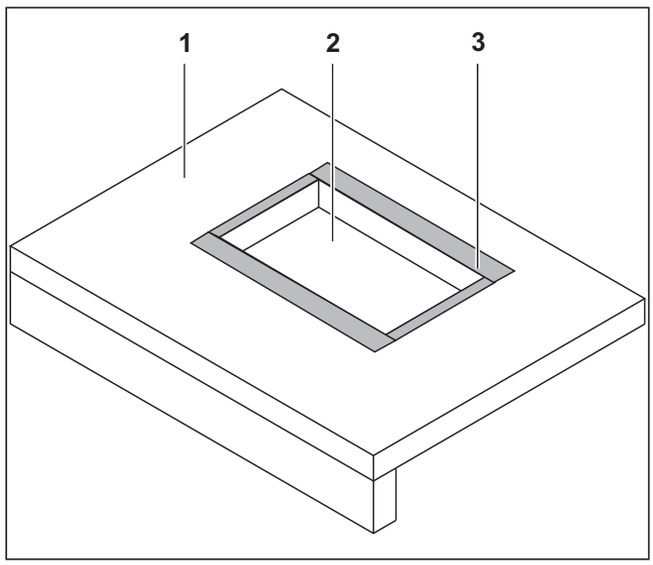
➲ Drill mounting holes for fan box (8 mm).

➲ Connect the corner markings for ceiling cutout and mark cutting edges.

➲ Make ceiling cutout and drill holes according to the drawing.

➲ Protect cut edges and holes against corrosion.

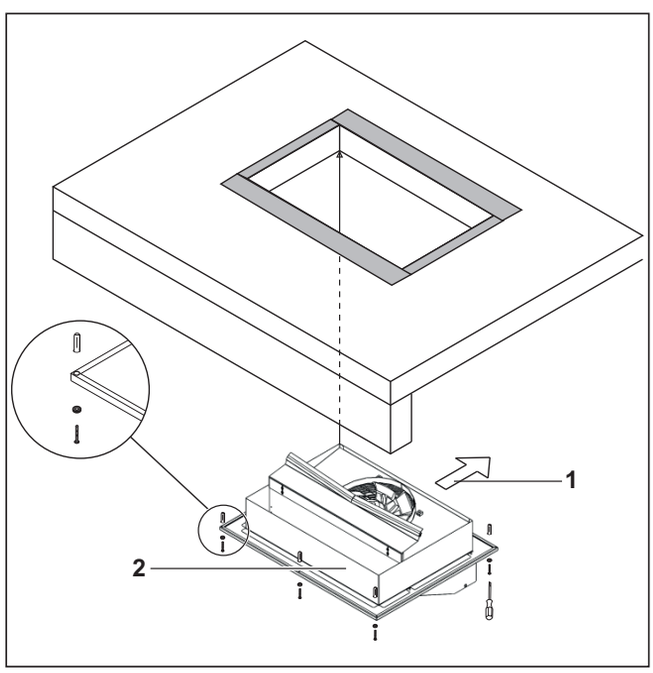
6.3.2 Installing ceiling unit



Applying sealing tape

➲ Apply sealing tape **3** as depicted to ceiling of refrigeration cell **1** flush with the ceiling cutout **2**.

6.3.3 Install fan box



➲ Insert enclosed neoprene M4 anchors in holes for fan box in refrigeration cell ceiling.

➲ Lift fan box **2** from below to the refrigeration cell ceiling and position corresponding to the holes.

➲ Ensure that the air discharge direction **1** points away from the front edge of the refrigeration cell ceiling.

➲ Install fan box on the refrigeration cell ceiling using the enclosed M4 screws and plastic washers.

➲ Put sealant on the upper side of the refrigeration cell ceiling circumferentially between the fan box with frame panel and ceiling cutout.

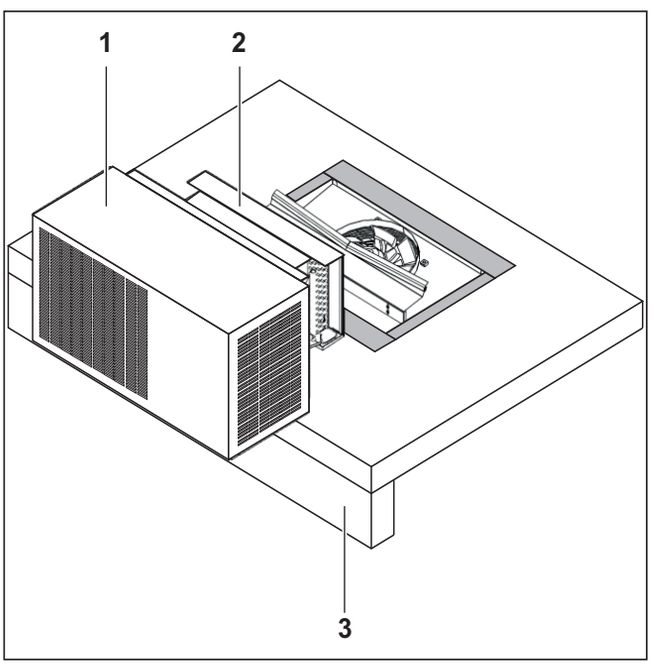
ⓘ *Application-specific limitations of the sealant should be noted.*

ⓘ *Use the thin attachment of the relevant tool.*

6.3.4 Attaching the machine part

NOTE	**Damage due to improper transport!**
	► Do not lift machine part at the evaporator.

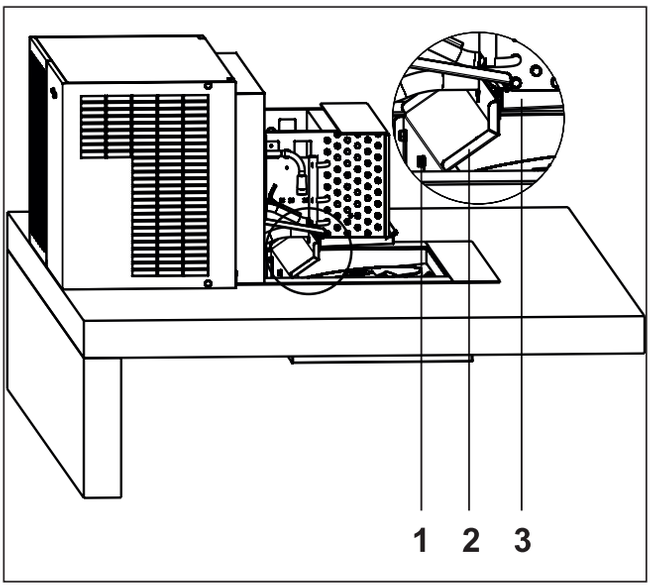
NOTE	**Damage due to improper installation!**
	► Ensure that the cable of the remote control and the power cable are not jammed between the ceiling unit and the refrigeration cell.



➲ Lift machine part **1** with appropriate lifting device to the height of the refrigeration cell ceiling.

➲ Slide machine part onto the refrigeration cell. Do not lift machine part at the evaporator **2**.

➲ Align machine part flush with the refrigeration cell wall **3**, centered with the ceiling cutout.



➲ Ensure that there is a tight connection between the bulkhead plate of the fan box **2** and the drip pan of the evaporator **3**:

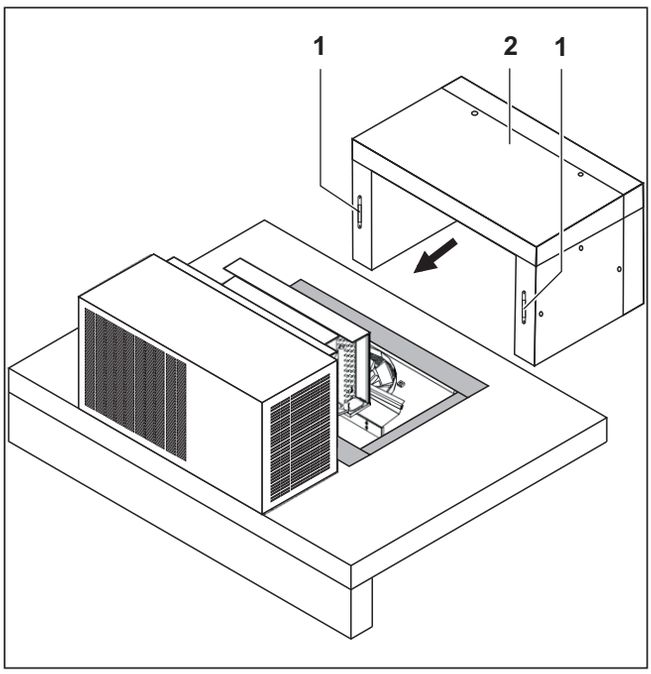
- Carry out a visual inspection.
- Fit bulkhead plate corresponding to the height using slotted holes and M6 screws **1.**

The remote control supplied has a magnet. It is possible to attach the remote control to magnetizable surfaces.

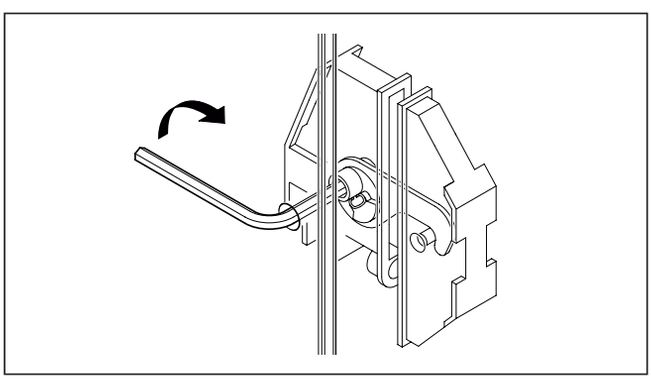
ⓘ *The magnetizable metal plate supplied can be used as an attachment surface for the remote control if there are no magnetizable surfaces available on site. The metal plate with double-sided installation adhesive tape can be attached without any additional fastening material to suitable surfaces.*

ⓘ *Note the cable length of the remote control. (Cf. Section technical data, p. 14).*

6.3.5 Installing insulation cover



➲ Slide insulation cover **2** over evaporator.



➲ IConnect insulation cover and ceiling unit together with eccentric locks **1**.

➲ Ensure that the eccentric locks lock.

➲ Close the lock holes of the eccentric locks with the enclosed plugs.

ⓘ *Hooks of the lateral eccentric locks lock from the top down (see diagram).*

ⓘ *Is the airthightness between insulation hood an cold room not given, pull a fillet weld with enclosed silicone around the insulation hood.*

6.4 Electric power supply

Electric power supply for the cold room:

- Via 4-pole outlet on ceiling unit
- On inlet side of the evaporator
- For supplying loads such as
  - Lighting
  - Door frame heating
  - Door contact switch
- Total output max. 500 watts

6.5 Connections:

6.5.1 Connecting condensation drain set (optional)

ⓘ *Ceiling unit has evaporation capacity for evaporation of condensation (cf. chapter Technical Data, p.14). If the amount of condensation exceeds the evaporation performance, install condensation drain set.*

In case of high amount of condensation:

➲ Disassemble covering (see section „12 Disassembly“ on page 12).

➲ Install condensation drain set using connections (12 mm) to the ceiling unit.

ⓘ *The condensation drain is on the right-hand back side of the ceiling unit (opposite the side with power cable feed).*

ⓘ *To reduce the amount of condensation, the setting “high relative humidity” is recommended in normal cooling (see Operating Instructions for Control, Section 5.6.6 “Adjusting the Air Humidity”)*

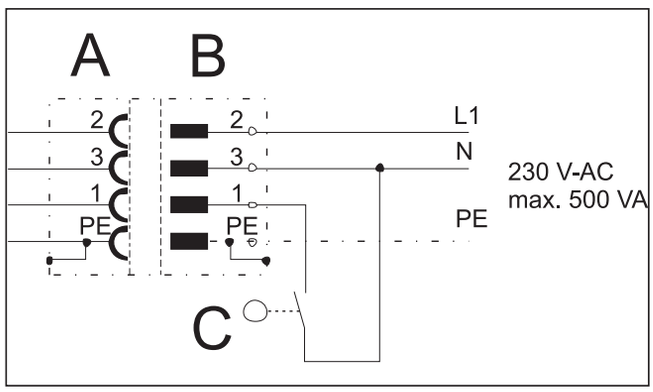
6.5.2 Connecting door contact switch (optional)

⚠ DANGER!	**Risk of death due to electric shock!**
	► Ensure that work is carried out exclusively by trained qualified personnel.
	► Before you begin any work on the ceiling unit disconnect the power plug.
	► Secure ceiling unit against accidental switch-on.

ⓘ *In order to switch off evaporator fan when the refrigerator cell door is opened,Viessmann Kühlsysteme GmbH recommends installing a door contact switch with a switching capacity of 230 VAC and at least 0.5 A.*

ⓘ *When connecting a door contact switch, it should be ensured that the connection cable is laid within the cold room in such a way that interference due to electromagnetic induction is kept to a minimum.*

ⓘ *Door contact switch is not included in the scope of delivery. Ceiling unit is ready for use without the door contact switch.*



A 4-pole plug connection to the ceiling unit
B 4-pole plug connection for the refrigeration cell
C Door contact switch when door is opened

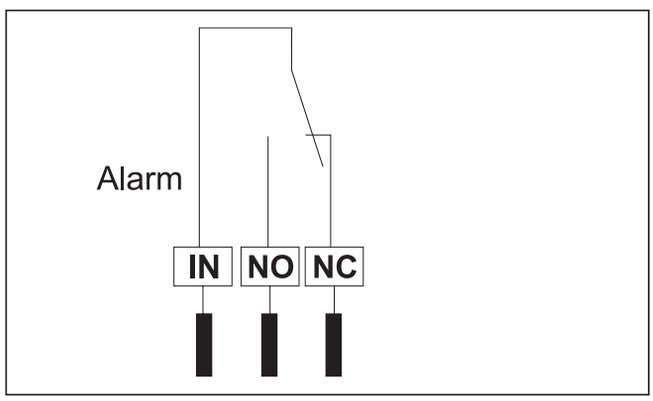
➲ Ensure that the ceiling unit is without power.

➲ Connect 4-pole plug connection of the door contact switch to the 4-pole outlet on inlet side of the evaporator.

➲ When a door contact switch is connected, follow the Operating Manual for the controls.

ⓘ *It is possible to connect devices with a total power consumption of 500W to the 4-pole plug connection of the fan box.*

6.5.3 Connecting fault message contact (optional)



ⓘ *The control has a floating fault message contact. It is possible to connect on-site a fault message device with max. 8 A and 230 VAC.*

ⓘ *The grid-side power failure is monitored.*

- In the case of disruption, contacts IN and NC are closed.
- Connection for the fault message device is on the circuit board (alarm plug connection).

7 Commissioning

⚠ DANGER!	**Risk of death due to electric shock!**
	▶ Ensure that commissioning is carried out exclusively by trained qualified personnel.
	▶ Ensure before commissioning that all components of the ceiling unit are properly assembled.
	▶ Ensure before commissioning that no individuals are working on the ceiling unit.

➲ Plug in power plug into a properly ground outlet with a personal protection measure (fault-current circuit breaker) as per nameplate specification.

Ceiling unit starts after a 1-minute delay.

To set the delay time:

➲ Follow the Operating Manual for the control.

8 Cleaning

⚠ DANGER!	**Risk of death due to electric shock!**
	▶ Ensure that commissioning is carried out exclusively by trained qualified personnel.
	▶ Ensure before commissioning that all components of the ceiling unit are properly assembled.
	▶ Ensure before commissioning that no individuals are working on the ceiling unit..

NOTE	**Damage due to incorrect cleaning!**
	▶ Do not clean Deckenaggregat with water jet or steam.

➲ Periodically check ceiling unit for soiling after the initial start-up and clean as required.

➲ Clean ceiling unit at least once a year.

Cleaning interval depends on:

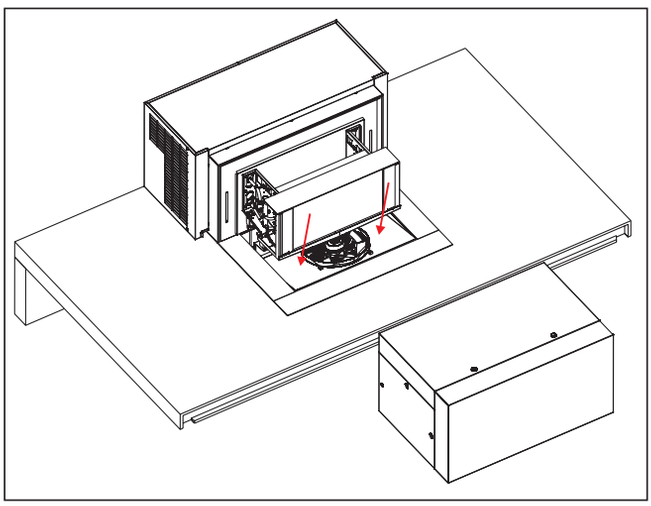
- Degree of soiling
- Surrounding conditions

➲ Disassemble sheet metal cover to clean individual components (see section „12 Demontage“ on page 12).

➲ Clean condenser and evaporator exclusively with a soft brush or compressed air.

➲ Remove very greasy residues with industrial cleaner.

➲ Do not use pointed or sharp-edged objects.



➲ Do not crush or damage thin plate fins when cleaning.

➲ Check fan box and evaporator cover for icing and remove if necessary.

➲ For larger quantities, reduce defrosting intervals on the fan box.

9 Maintenance

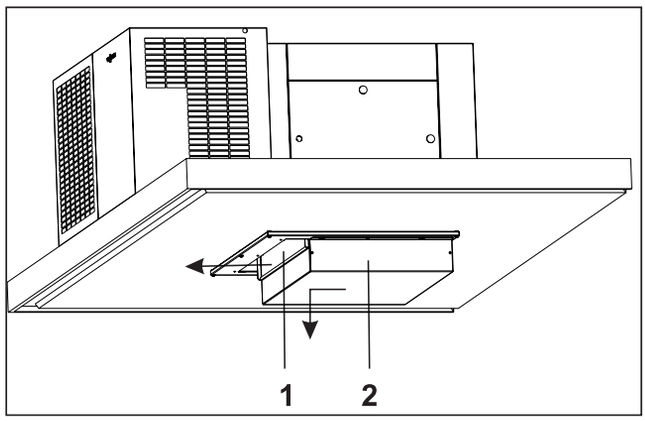
⚠ DANGER!	**Risk of death due to electric shock!**
	► Ensure that commissioning is carried out exclusively by trained qualified personnel.
	► Ensure before commissioning that all components of the ceiling unit are properly assembled.
	► Ensure before commissioning that no individuals are working on the ceiling unit.

➲ Service ceiling unit at least once a year.

➲ Fill out maintenance checklist, see section „22 Maintenance checklist“ on page 31.

10 Repair - fan replacement

Replacement of a defective fan will be described in this section. Work should be carried out exclusively after failure of the fan.

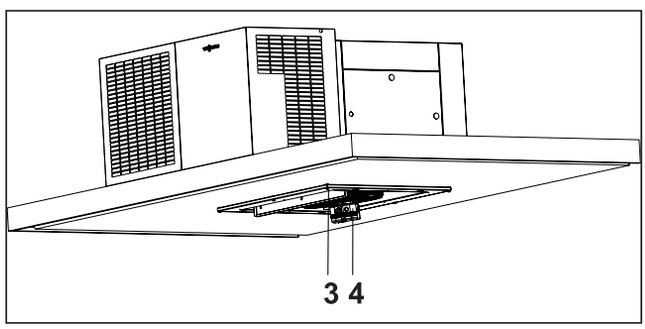


Replace the fan as follows:

➲ Unscrew the screws of the air baffle **2**.

➲ As required, remove the stiffening plate **1**.

➲ Remove air baffle.



➲ Remove fan **4** by loosening the mounting screws.

➲ Replace new fan in such a way that the connection cable points toward gap **3** in the fan box

➲ Tighten fan mounting screws.

➲ Put on air baffle **2** and fit new rivets through the existing holes.

➲ Check direction of rotation of the fan. Fan must blow out into the refrigeration cell.

11 Decommissioning

For a prolonged downtime of the ceiling unit:

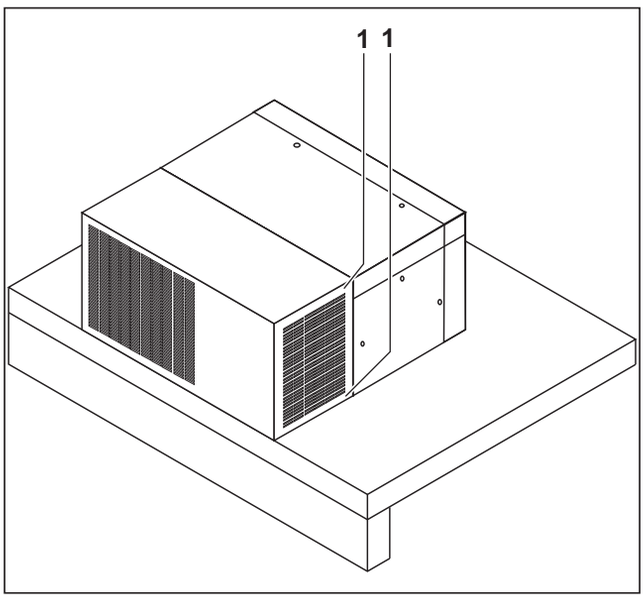
➲ Disconnect power plug.

For a temporary downtime of the Ceiling unit

➲ Follow the Operating Manual for controls.

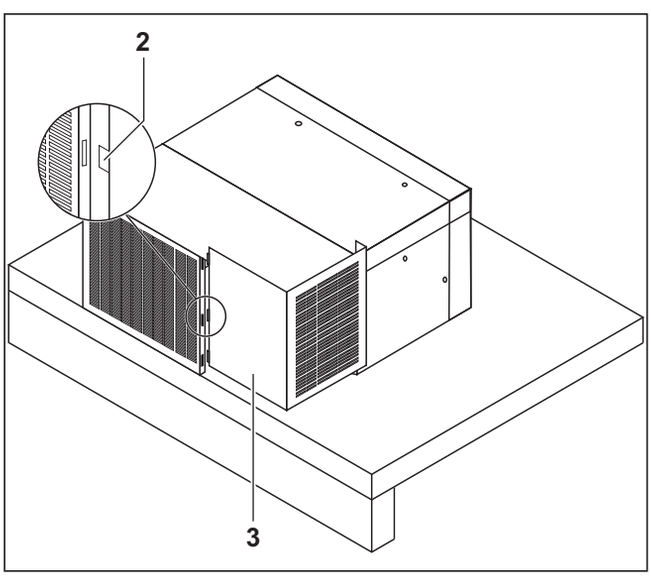
12 Disassembly

ⓘ *During disassembly of the sheet metal parts, disconnect ground cable and reconnect during reassembly.*



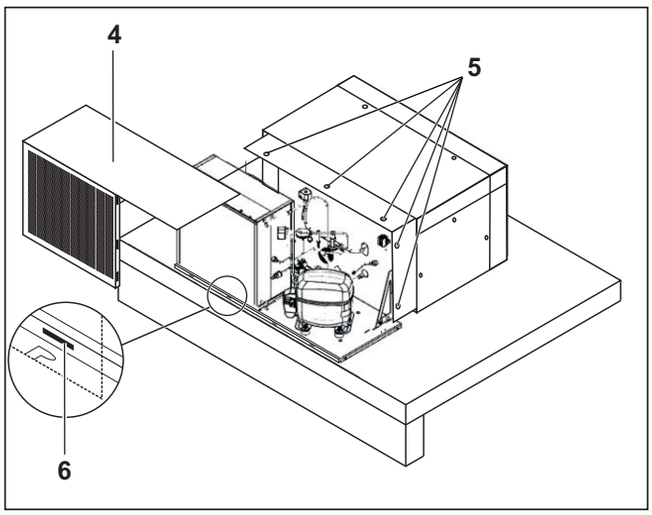
Disassemble ceiling unit as follows:

➲ Loosen screws **1** on the right side of the ceiling unit.



➲ Turn the covering panel **3** in such a way that the safety tabs **2** are free.

➲ Remove covering panel.



➲ Loosen screws on the left side of the ceiling unit and remove the covering **4** to the side.

Assemble ceiling unit as follows:

➲ Carry out the disassembly steps in reverse order.

➲ Set covering panel **4** laterally onto base plate and hook it into the notches **6** [boldface] intended for it.

➲ Press coverings firmly onto plugs **5** and tighten screws on the left side of the ceiling unit.

➲ Turn covering panel **3** in such a way that the safety tabs take hold.

➲ Press coverings firmly onto plugs **5** and tighten screws **1** on the right side of the ceiling unit.

13 Disposal

NOTE	**Environmental damage due to leaking refrigerant!** ► Ensure that tubing is not damaged when disassembling the ceiling unit. ► Ensure that no refrigerant leaks.

➲ Have refrigerant suctioned by specialists.

➲ Dispose of suctioned refrigerant in an environmentally compatible way and according to applicable disposal regulations.

➲ Dispose of defective ceiling units in an environmentally compatible way and according to applicable disposal regulations.

14 Technical data

- The performance values apply to devices with clean heat exchangers.
- Tolerances on the values correspond to DIN EN 12900:1213.
- Cooling capacity presented is based on DIN EN 328:2014.
- Cold room temperature measured at the unit air inlet as per DIN EN 328:2014.
- Ambient temperature measured at the unit air inlet as per DIN EN 327:2014.

14.1 Standard refrigeration

Standard refrigeration							
Designation		CMC 0700	CMC 0900	CMC 1300	CMC 1900	CMC 3300	CMC 4200
Size[1]		1		2		3	
Cold room temperature control range	[°C]	-5 to +20					
Cooling capacity at standard point[2]	[W]	700	900	1300	1900	3300	4200
Heating capacity at standard point[2]	[W]	1310	1680	2250	3070	5040	6520
Power consumption at standard point[2]	[W]	610	780	950	1170	1740	2320
EER[3]		1.15	1.15	1.37	1.62	1,90	1.81
Evaporation performance[4]	[l/d]	4,5	4,5	4,5	4,5	10	10
Permissible ambient temperature	[°C]	+10 to +42					
Refrigerant		R134a					
Amount of refrigerant	[kg]	1.1	1.4	2.3	2.4	4.2	4.2
GWP[5]		1430					
CO_2 equivalent	[t CO_2]	1.6	2.0	3.3	3.4	6.0	6.0
Max. pressure (high pressure side)	[bar a]	18					
Refrigerant circuit		Hermetically sealed					
Expansion valve		thermostatic expansion valve					
Type of defrosting		air circulation defrosting / hot gas defrosting					
Voltage/phases/frequency	[V] / - / [Hz]	230 / 1 / 50			400 / 3 / 50		
Length of power cable	[m]	5			0.5		
Fuse protection (C-rated)	[A]	16					
Protection class		IP 34					
Sound pressure level[6]	[dB(A)]	45	45	49	56	54	58
Evaporator fan air throw in cold room	[m]	5		10		15	
Air volume to be discharged[7]	[m^3/h]	690	880	1180	1610	2570	3410
Cable length remote control	[m]	15					
Dimensions D x W x H (without fan box)	[mm]	945 x 900 x 445		1035 x 1070 x 550		1450 x 1530 x 645	
Ceiling cut-out dimensions	[mm]	405 x 570		450 x 740		690 x 1200	

Standard refrigeration							
Designation		CMC 0700	CMC 0900	CMC 1300	CMC 1900	CMC 3300	CMC 4200
Measurement from bottom edge of built-in fan box to ceiling of cold room	[mm]	114					
Total weight, incl. packaging	[kg]	95	105	144	148	247	258
Total weight, without packaging	[kg]	70	80	112	117	208	219
Weight of fan box	[kg]	8		10		23	
Weight of machine part	[kg]	47	57	82	87	147	158
Weight of insulation cover	[kg]	15		20		38	

[1] Applies exclusively to these Installation and Operating Instructions.

[2] Standard points: Standard refrigeration (NK): L0°/L32° C; deep freezing (TK): L-20°/L32° C; heat output: heat flow that is given off by the device in cooling mode to the surroundings.

[3] EER: Energy Efficiency Ratio; ratio cooling capacity to electric power consumption.

[4] Evaporation rate related to normal point L0°/L32°C, 30 % relative room humidity and operating time 16 h/d. Deviating operating points and reduced running time can reduce evaporation performance

[5] Manufacturer's data

[6] A-rated sound pressure level measured at a distance of 1 m. Divergent sound pressures levels can be reached depending on spatial considerations.

[7] Volume flow indicated at the standard point at a ΔT of 6K (NK) or 8K (TK).

14.2 Freezer

Freezer							
Designation		CMF 0800	CMF 1100	CMF 1300	CMF 1700	CMF 2900	CMF 4100
Size[1]		1		2		3	
Cold room temperature control range	[°C]	-25 to -5					
Cooling capacity at standard point[2]	[W]	800	1100	1300	1700	2900	4100
Heating capacity at standard point[2]	[W]	2200	2820	2720	3570	5580	7510
Power consumption at standard point[2]	[W]	1400	1720	1420	1870	2680	3410
EER[3]		0.57	0.64	0.92	0.91	1.08	1.20
Evaporation performance[4]	[l/d]	4,5	4,5	4,5	4,5	10	10
Permissible ambient temperature	[°C]	+10 to +42					
Refrigerant		R407A					
Amount of refrigerant	[kg]	1.1	1.1	2.6	2.6	4,8	5.1
GWP[5]		2107					
CO_2 equivalent	[t CO_2]	2.3	2.3	5.1	5.5	8.2	10.7
Max. pressure (high pressure side)	[bar a]	28					
Refrigerant circuit		Hermetically sealed					
Expansion valve		thermostatic expansion valve					
Type of defrosting		Hot gas defrosting					
Voltage/phases/frequency	[V] / - / [Hz]	230 / 1 / 50		400 / 3 / 50			
Length of power cable	[m]	5		0.5			
Fuse protection (C-rated)	[A tr.]	16					
Protection class		IP 34					
Sound pressure level[6]	[dB(A)]	63	65	53	56	61	60
Evaporator fan air throw in cold room	[m]	5		10		15	
Air volume to be discharged[7]	[m^3/h]	870	1110	1070	1410	2190	2950
Cable length remote control	[m]	15					
Dimensions D x W x H (without fan box)	[mm]	945 x 900 x 445		1035 x 1070 x 550		1450 x 1530 x 645	
Ceiling cut-out dimensions	[mm]	405 x 570		450 x 740		690 x 1200	
Measurement from bottom edge of built-in fan box to ceiling of cold room	[mm]	100					
Total weight, incl. packaging	[kg]	115	119	148	151	260	263
Total weight, without packaging	[kg]	90	94	116	119	221	224
Weight of fan box	[kg]	8		10		23	
Weight of machine part	[kg]	67	71	86	89	160	163
Weight of insulation cover	[kg]	15		20		38	

[1] Applies exclusively to these Installation and Operating Instructions.

[2] Standard points: Standard refrigeration (NK): L0°/L32° C; deep freezing (TK): L-20°/L32° C; heat output: heat flow that is given off by the device in cooling mode to the surroundings.

[3] EER: Energy Efficiency Ratio; ratio cooling capacity to electric power consumption.the surroundings.

[4] Evaporation rate related to normal point L0°/L32°C, 30 % relative room humidity and operating time 16 h/d. Deviating operating points and reduced running time can reduce evaporation performance

[5] Manufacturer's data

[6] A-rated sound pressure level measured at a distance of 1 m. Divergent sound pressures levels can be reached depending on spatial considerations.

[7] Volume flow indicated at the standard point at a ΔT of 6K (NK) or 8K (TK).

15 Standards and laws

➲ Comply with the applicable standards and laws:

- EMC directive 2014/30/EU
- Machinery directive 2006/42/EU
- DIN EN 378 (2008/2012)
- F-gas regulation 2014/517/EU

ⓘ *Ceiling unit is built and tested in accordance with applicable standards and laws.*

ⓘ *Ceiling unit is tested for the tightness and functioning of the refrigerant circuit.*

16 Warranty

Excerpt from our warranty terms.

The warranty period is 1 year. The warranty claim period starts on the day of the delivery, which is to be verified by delivery note or invoice. Malfunctions that can be attributed to poor workmanship or material defects will be rectified free of charge within the warranty period.

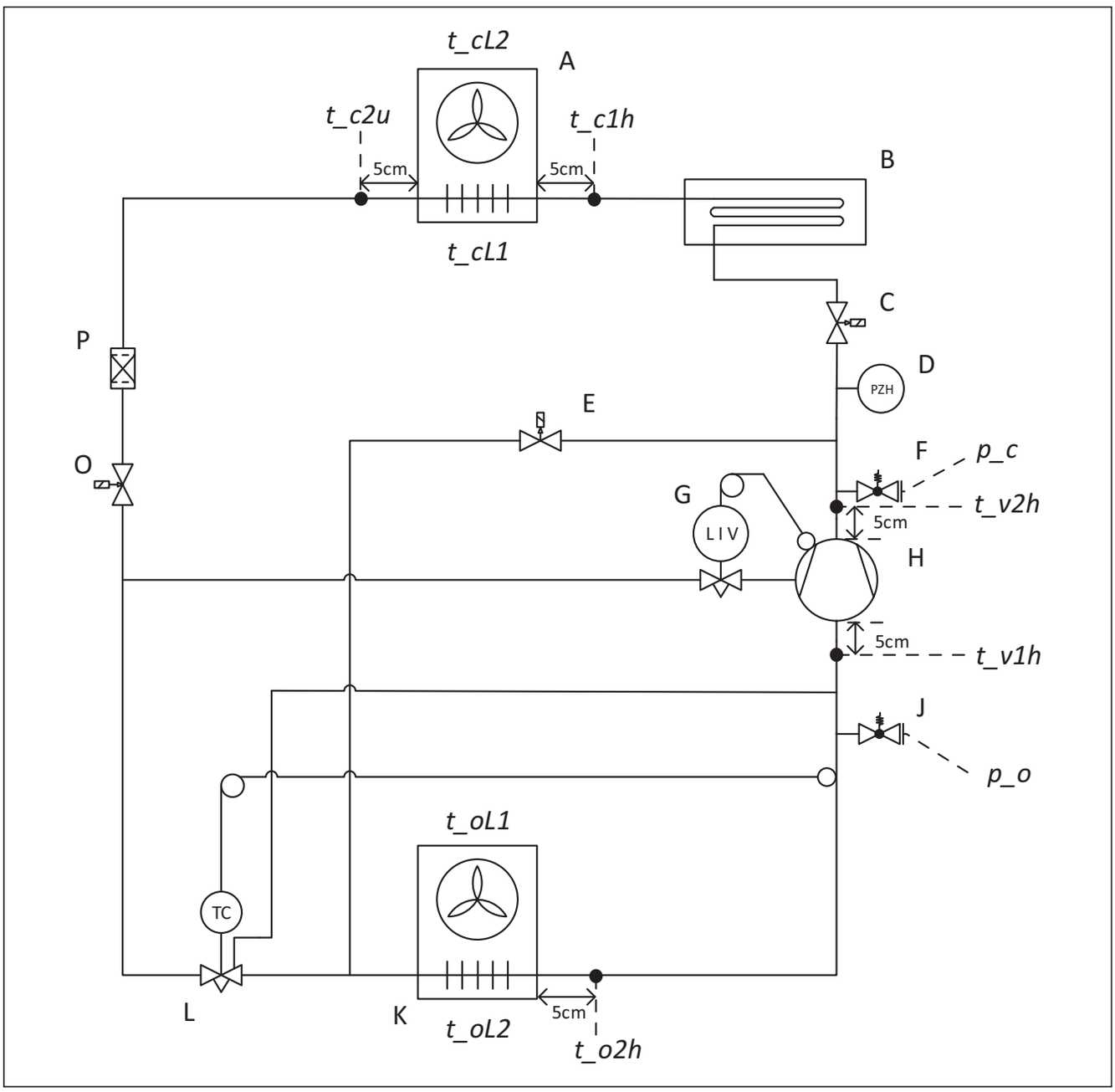
Further claims, in particular for consequential damages, are excluded.

We shall assume no warranty for damages resulting from improper or inappropriate use, faulty installation or commissioning by the purchaser or third party, natural wear and tear, faulty or negligent handling, chemical or electrochemical and electrical impacts, provided that they cannot be attributed to our fault, failure to observe the installation, operating, and maintenance instructions, improper modifications or repair work by the purchaser or third party, and effects of parts of external origin.

The warranty shall also expire if the refrigerant circuit has been opened by unauthorized persons, interventions in the system structure have been made, or the serial number on the device has been changed or made unrecognizable.

17 Refrigeration circuits and measurement points

Tubing and instrument flow chart without EVI[1]



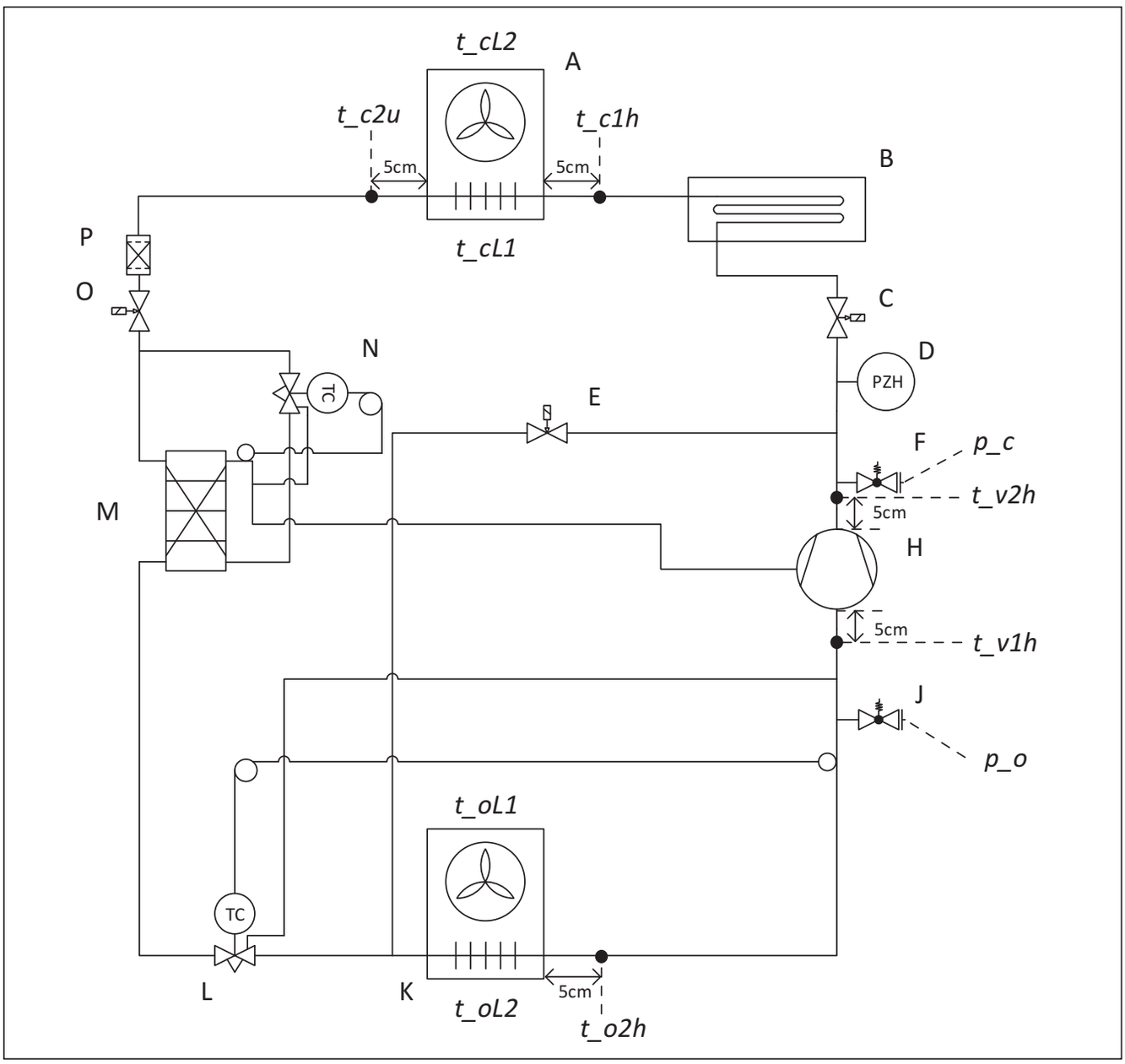
A	Condenser	H	Compressor
B	Condensation water evaporator pan	J	Low pressure test connection
C	Solenoid valve, hot gas line	K	Evaporator
D	High pressure switch	L	Thermostatic expansion valve
E	Solenoid valve, hot gas defrosting	O	Solenoid valve, liquid line
F	High pressure test connection	P	Filter dryer
G	Control valve final compression temperature		

[1] EVI stands for Enhanced Vapor Injection.

Measurement points		
Designation	**Measurement categories**	**Unit**
t_c1h	Inlet temperature condenser	°C
t_c2u	Outlet temperature condenser	°C
t_cL1	Air intake temperature condenser	°C
t_cL2	Air outlet temperature condenser	°C
t_v1h	Inlet temperature compressor	°C
t_v2h	Outlet temperature compressor	°C
t_o2h	Outlet temperature evaporator	°C
t_oL1	Air intake temperature evaporator	°C
t_oL2	Air outlet temperature evaporator	°C
p_o	Evaporation pressure	bar
p_c	Condensation pressure	bar

Tubing and instrument flow chart with EVI[1]

ⓘ *This tubing and instrument flow chart is valid exclusively for the ceiling unit CMF 4100 with EVI*



A	Condenser	J	Low pressure test connection
B	Condensation water evaporator pan	K	Evaporator
C	Solenoid valve, hot gas line	L	Thermostatic expansion valve
D	High pressure switch	M	Plate heat exchanger
E	Solenoid valve, hot gas defrosting	N	Thermostatic expansion valve
F	High pressure test connection	O	Solenoid valve, liquid line
H	Compressor	P	Filter dryer

[1] EVI stands for Enhanced Vapor Injection.

Measurement points		
Designation	**Measurement categories**	**Unit**
t_c1h	Inlet temperature condenser	°C
t_c2u	Outlet temperature condenser	°C
t_cL1	Air intake temperature condenser	°C
t_cL2	Air outlet temperature condenser	°C
t_v1h	Inlet temperature compressor	°C
t_v2h	Outlet temperature compressor	°C
t_o2h	Outlet temperature evaporator	°C
t_oL1	Air intake temperature evaporator	°C
t_oL2	Air outlet temperature evaporator	°C
p_o	Evaporation pressure	bar
p_c	Condensation pressure	bar

18 Measurement points

18.1 Measuring air-side temperatures on the condenser

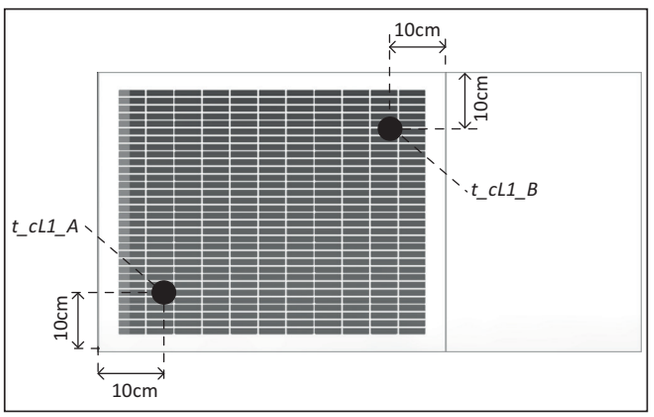


Diagram shows the frontal view of the ceiling unit with the corresponding locations for determining the air inlet temperature in front of the condenser (t_cL1). An arithmetic mean value t_cL1 is calculated from both measured values t_cL1_A and t_cL1_B.

Measuring air-side in front of the condenser:

➲ Attach temperature sensors t_cL1_A and t_cL1_B according to the diagram 1 cm above the surface of the covering panel.

➲ Carry out the measurement.

Measuring air-side on the other side of the condenser:

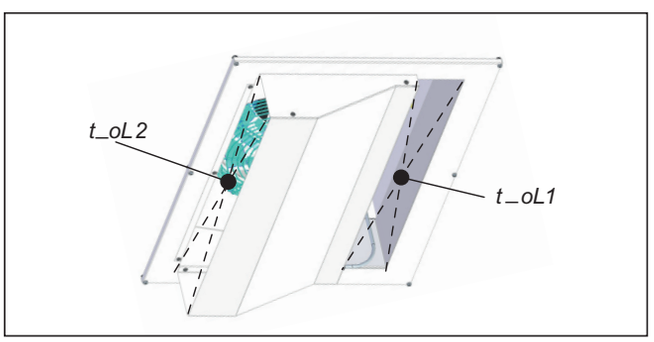
➲ Remove covering panels, see section „12 Demontage“ on page 12.

➲ Attach temperature sensor t_cL2 at a distance of 5cm from fan (on the discharge side) and axially aligned with the fan hub.

➲ Assemble the covering panels.

➲ Carry out the measurement.

18.2 Measuring air-side temperatures on the evaporator



The diagram shows the rectangular air inlet on the evaporator (bottom of the ceiling unit).

Temperature sensor t_oL1: air-side temperature at the inlet of the evaporator.

Temperature sensor t_oL2: air-side temperature at the outlet of the evaporator.

➲ Attach temperature sensor t_oL1 in the middle of the air inlet at the level of the refrigeration cell ceiling as per the diagram.

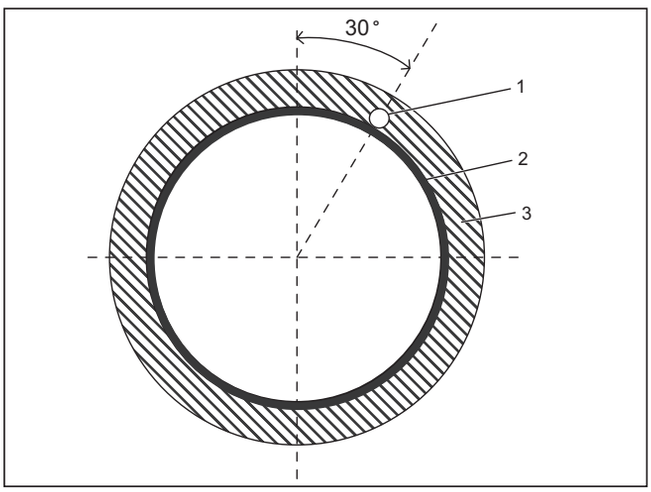
➲ Attach temperature sensor t_oL2 in the middle of the air outlet as per the diagram.

➲ Carry out the measurement.

18.3 Positioning temperature sensors for measurements during servicing

ⓘ *The measurement points serve to determine temperatures during servicing (Cf. „Tubing and instrument flow chart without EVI1“ auf Seite 18 and „Tubing and instrument flow chart with EVI1“ auf Seite 20).*

ⓘ *Only use calibrated temperature sensors for measurement.*



➲ If present, remove insulating material **3** at the measurement point.

➲ Place and attach suitable temperature sensor **1** on refrigerant tubing **2.** Temperature sensor must lie completely flat

➲ Insulate measurement point with insulating material (min. 5 mm) before measurement.

➲ Carry out the measurement.

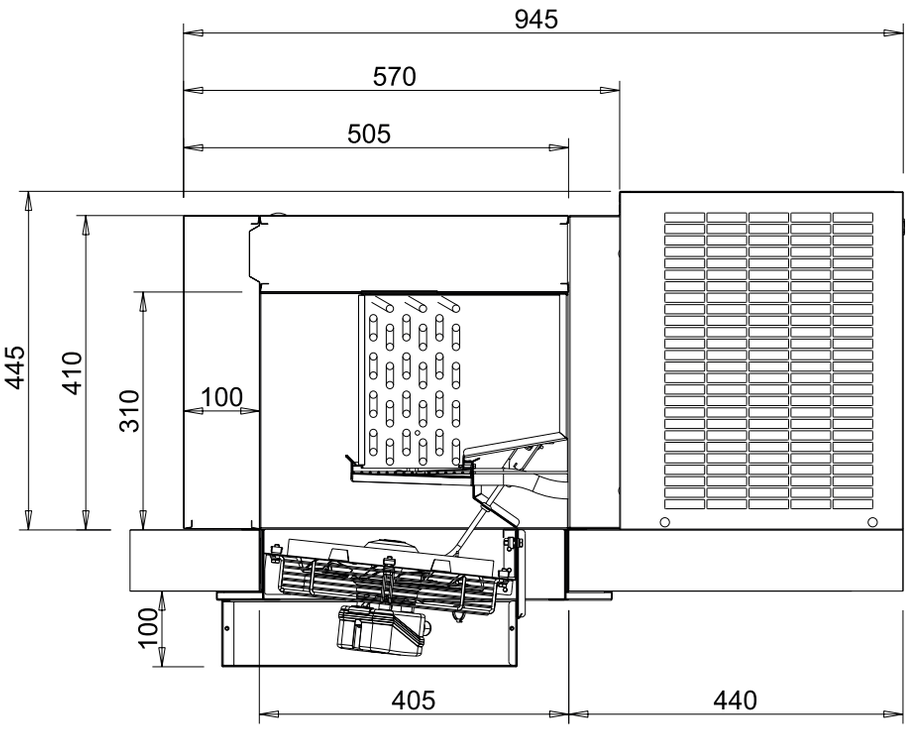
➲ After measurement, remove temperature sensors and insulate measurement point appropriately.

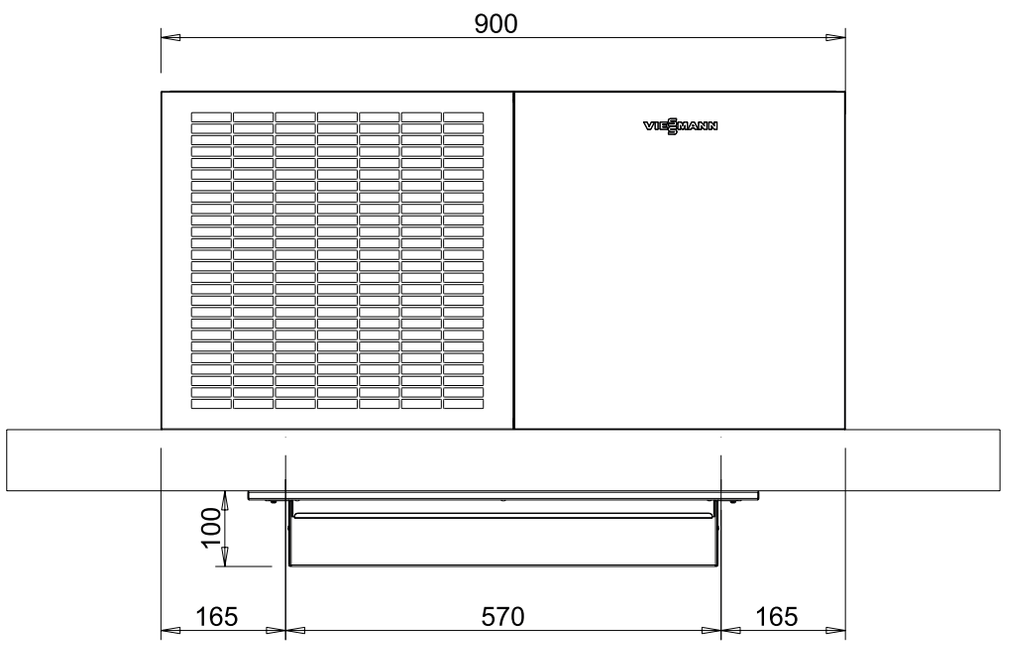
19 Dimensional drawings

Data on sizes see section „14 Technical data“ on page 14..

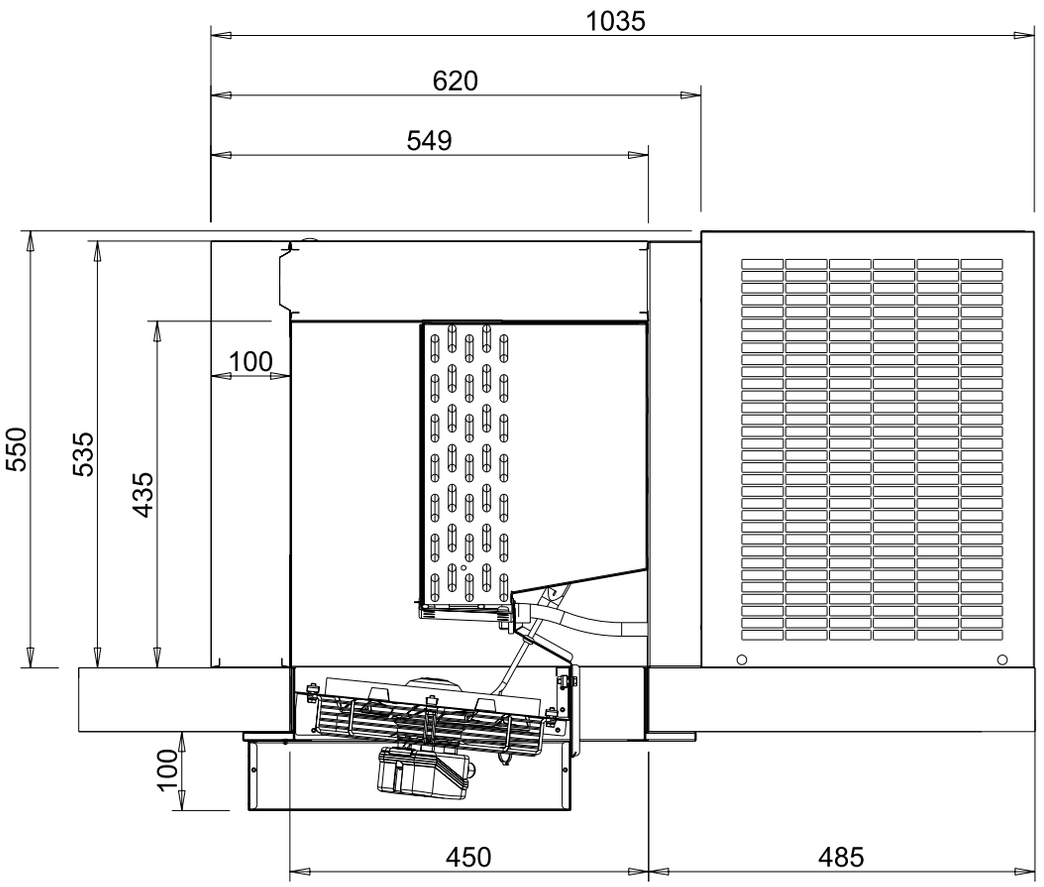
⇦	Direction of the air steam

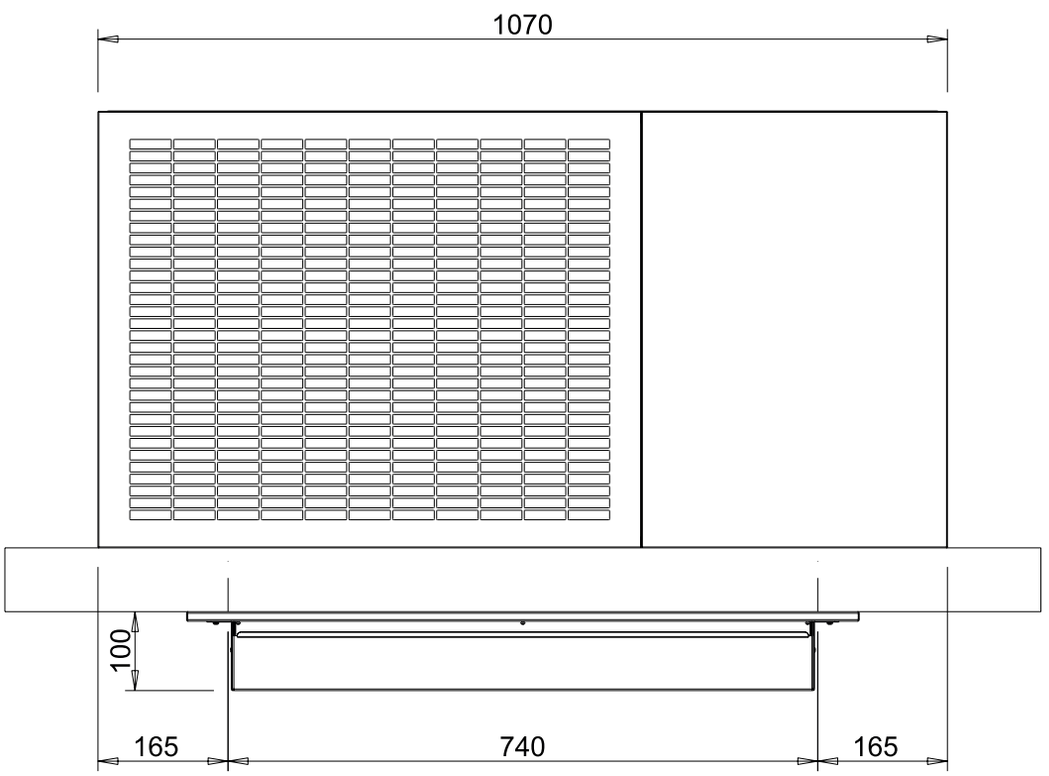
19.1 Size 1



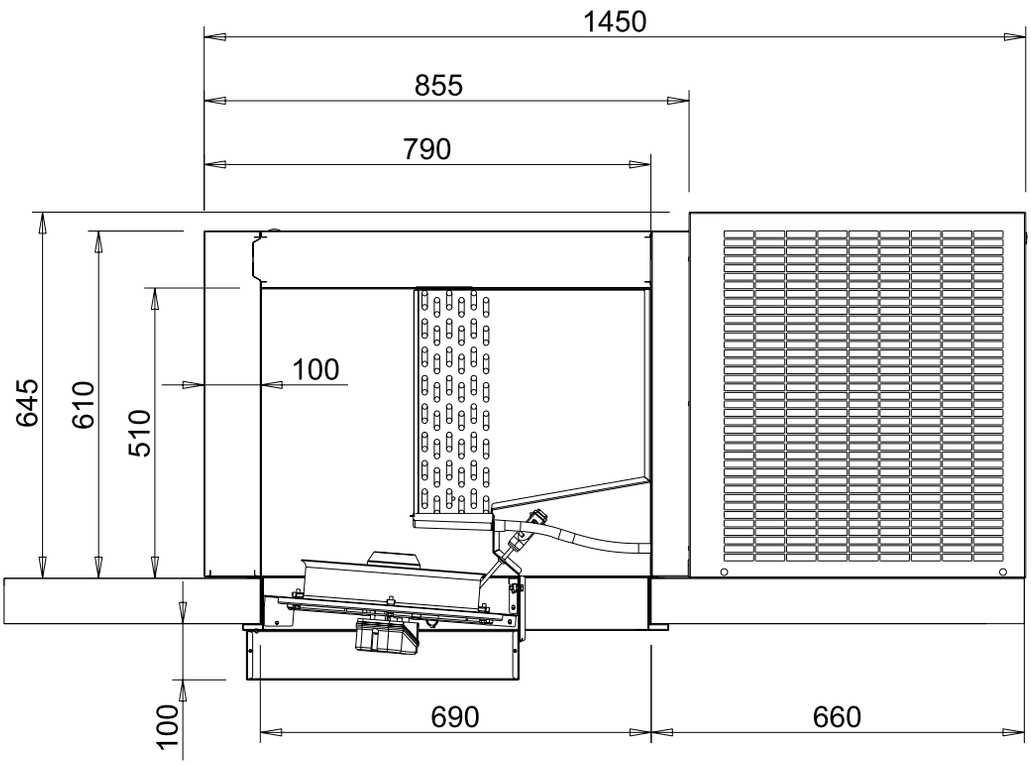


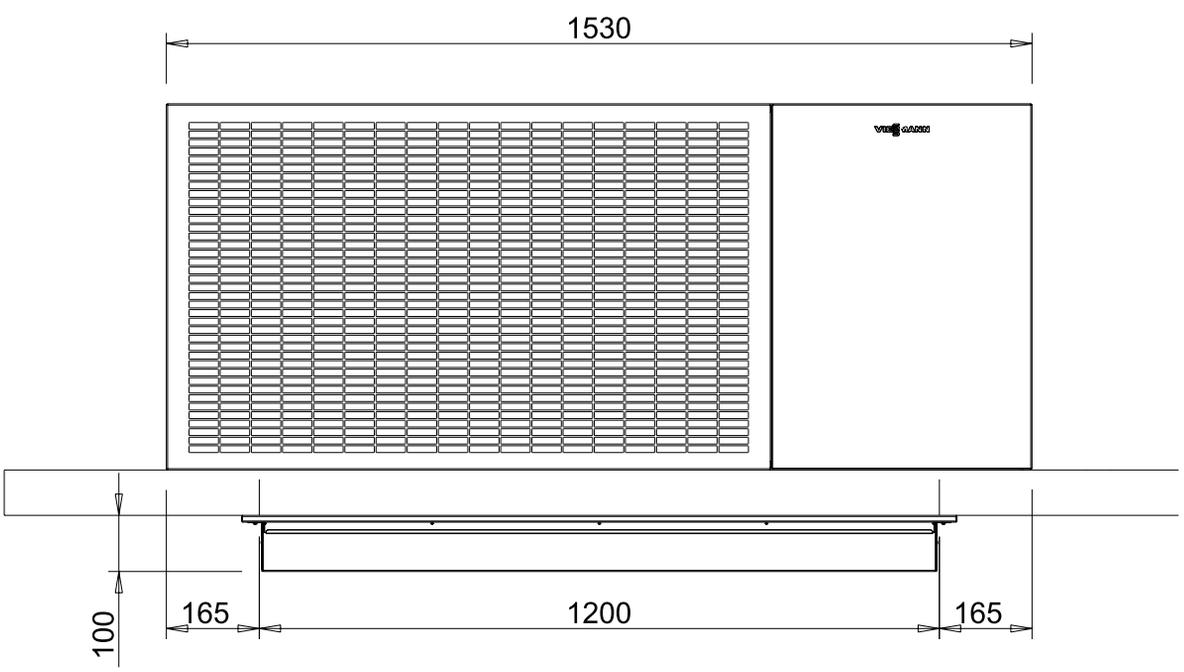
19.2 Size 2





19.3 Size 3



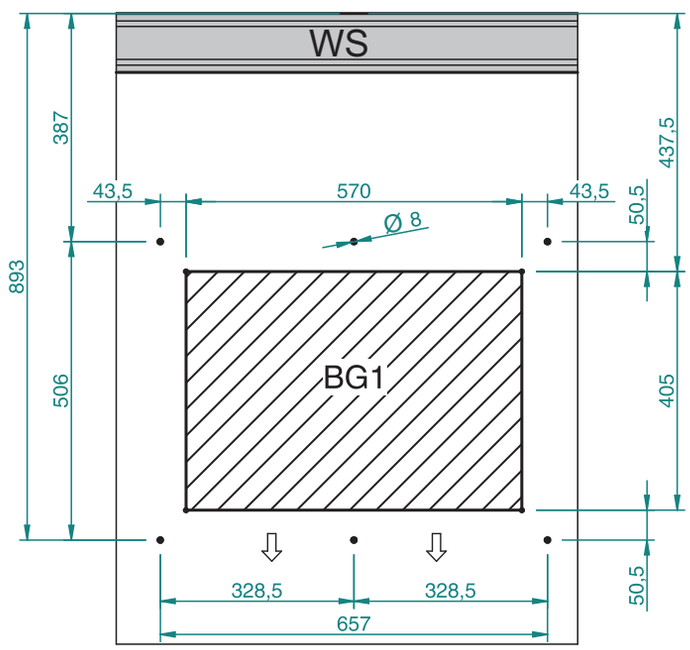


20 Drawings for ceiling cutout and drill holes

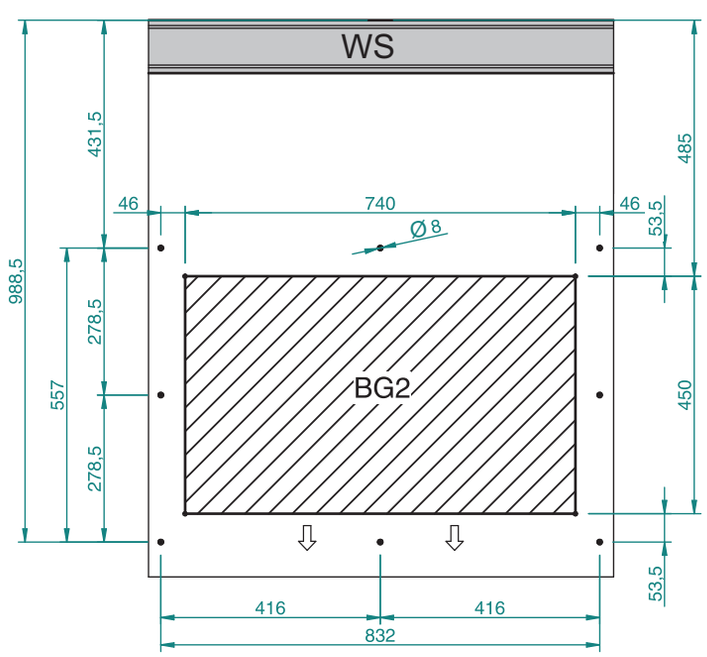
Ensure that there is at least 1500 mm unencumbered space in the discharge direction.

WS	Wall thickness
	Ceiling cut-out
⇩	Exhaust direction

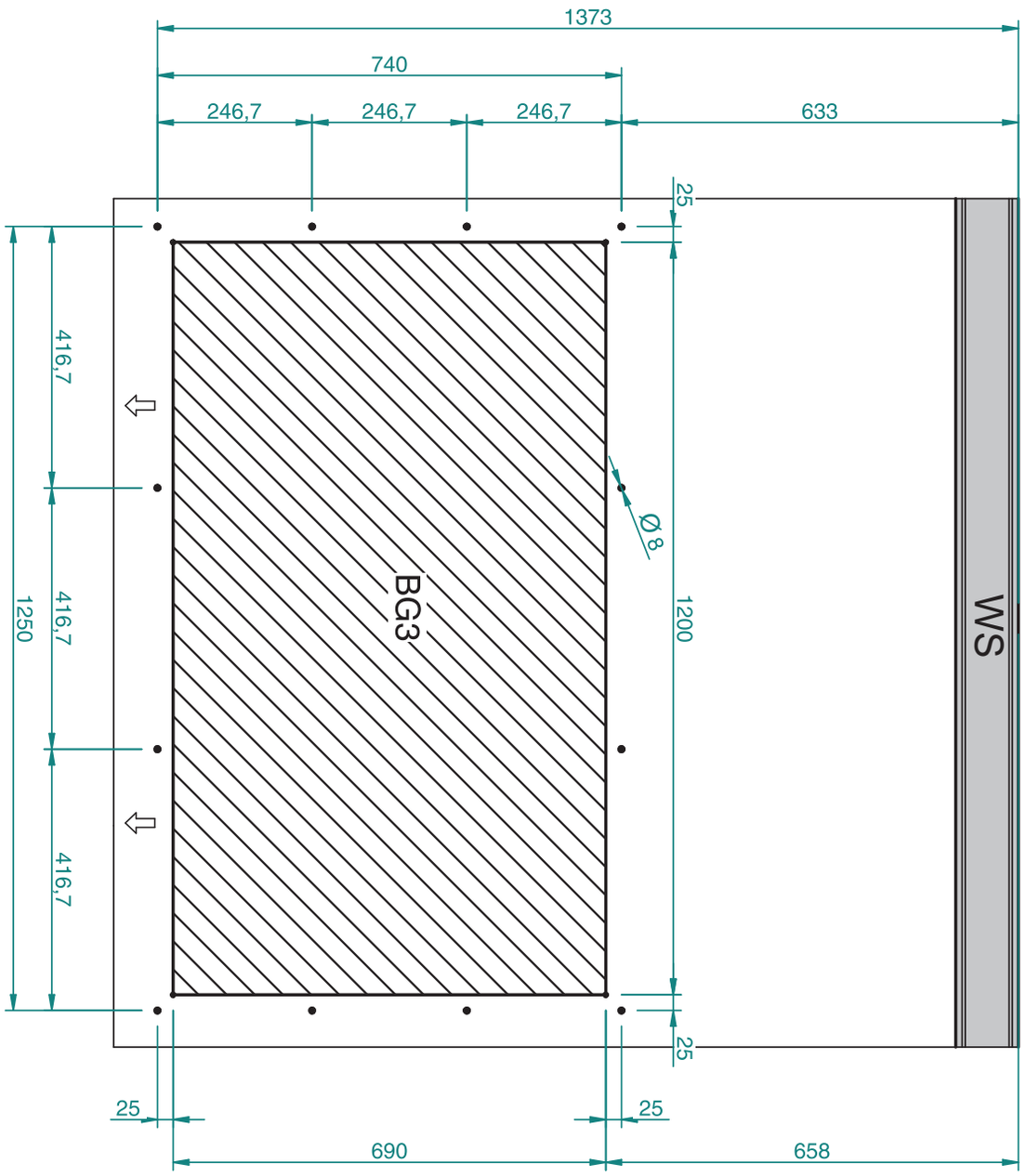
20.1 Size 1



20.2 Size 2

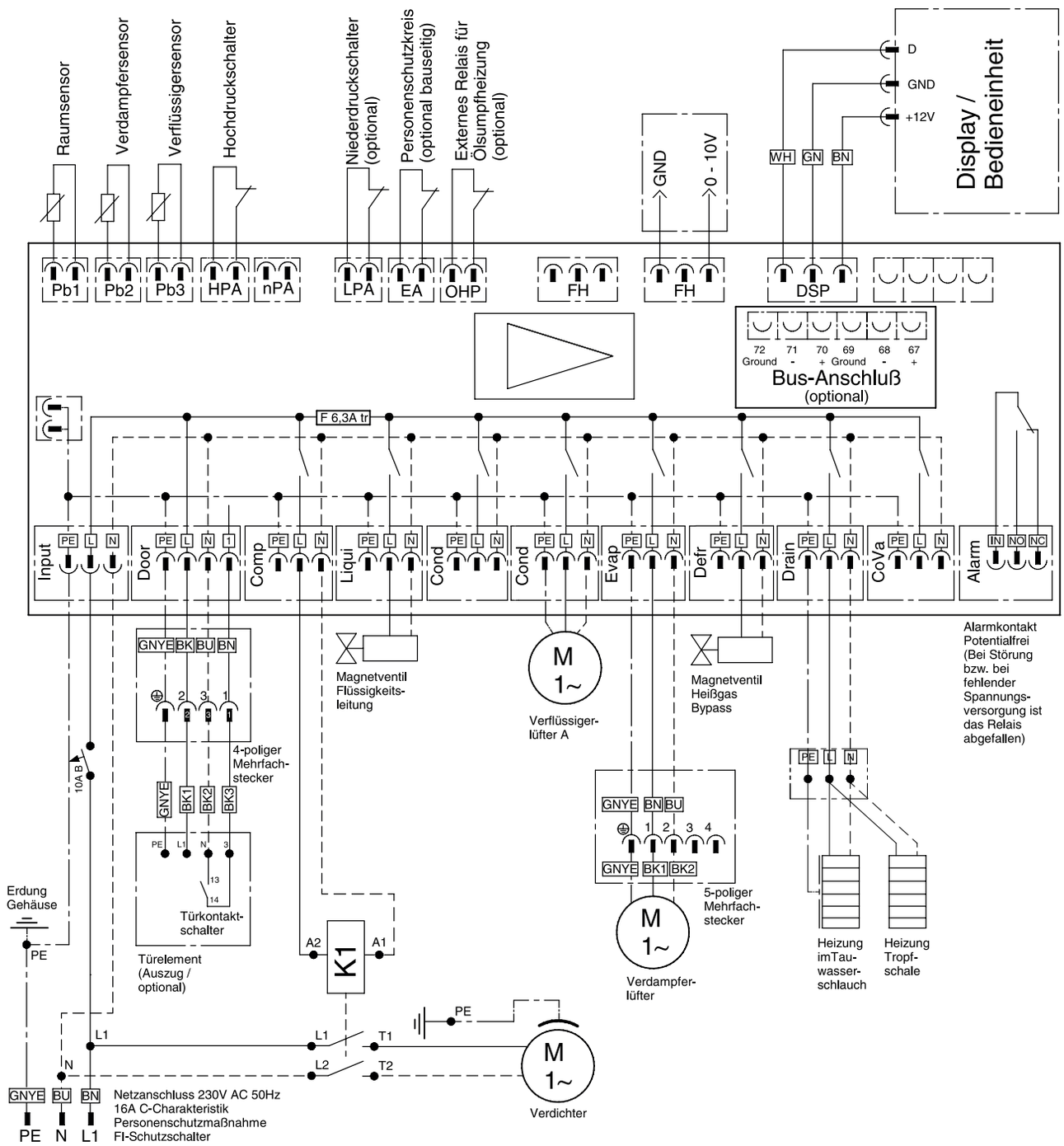


20.3 Size 3

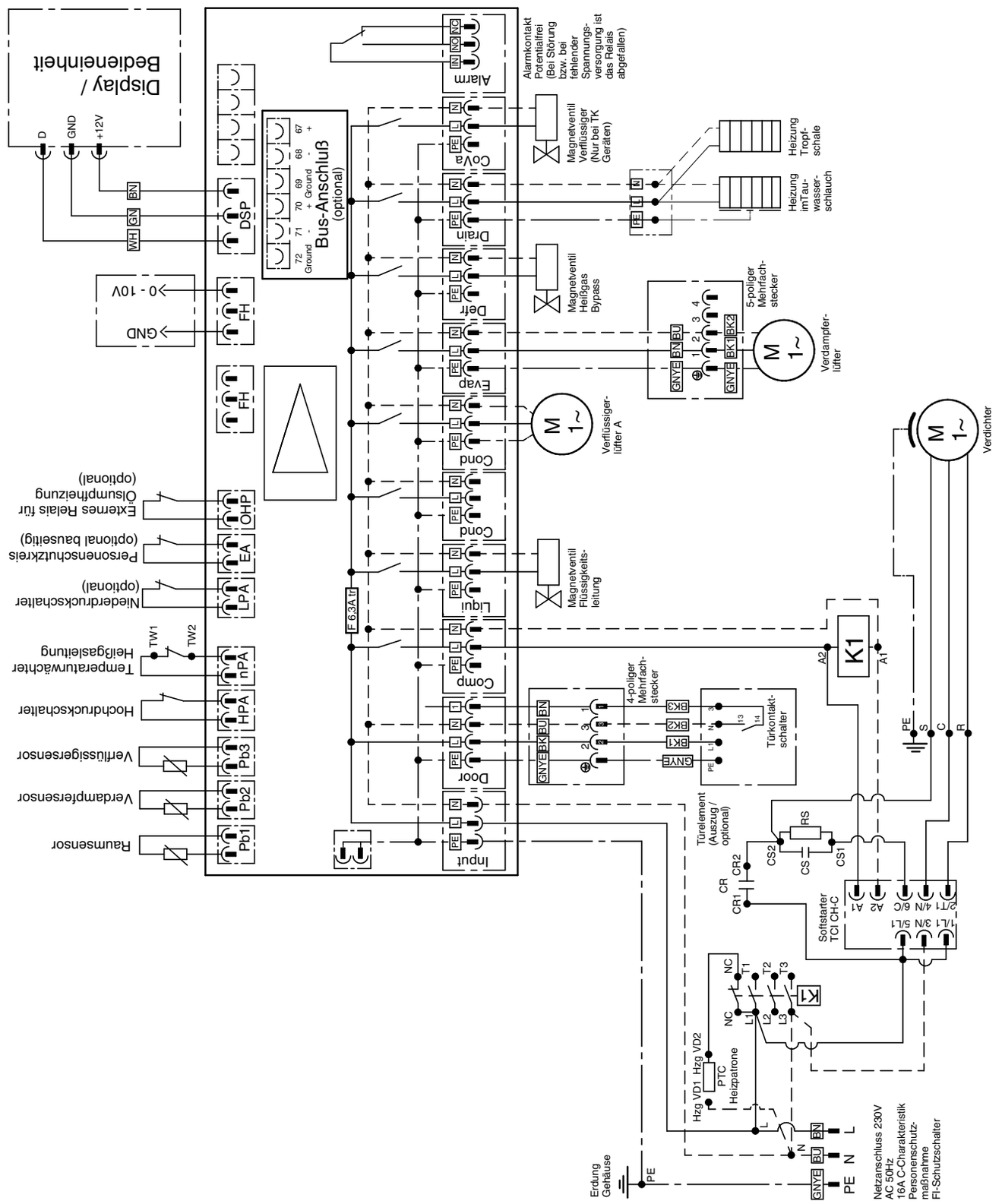

1373
740
246,7
246,7
246,7
633
25
416,7
416,7
416,7
1250
Ø 8
BG3
1200
WS
25
25
25
690
658

21 Circuit diagrams

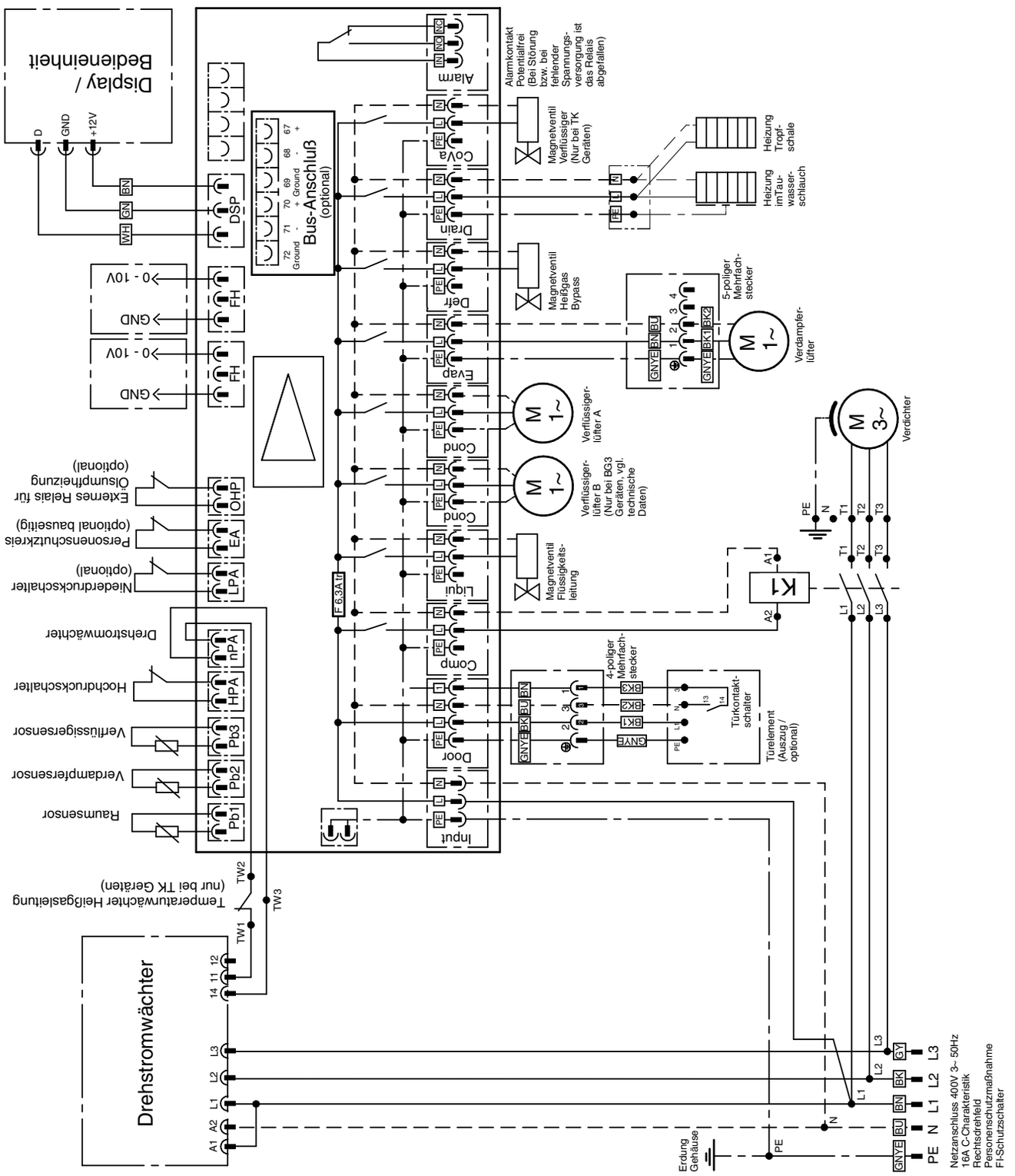
21.1 Circuit diagram for standard refrigeration units - 230 V



21.2 Circuit diagram for deep freezing units - 230 V



21.3 Circuit diagram for refrigeration units - 400 V



22 Maintenance checklist

➲ Copy the maintenance checklist and fill out during maintenance..

Maintenance checklist

Company:		Telephone number:		Start of work:	Serial number:
Branch number:		Cell size/type:			
Street:		Original installation (CW):		End of work:	
Post code/place:		Year of maintenance:			

□	1	Check for damage to the cell (cell elements and impact protection)
□	2	Check parameters on the control
□	3	Check function of accessories (defrost heating, door contact switch)
□	4	System shut-down
□	5	Check condensers/liquefiers for dirt and damage, clean if necessary
□	6	Check vaporiser for dirt and damage, clean if necessary
□	7	Check fan box and cover of the vaporiser for ice build-up, remove if necessary
□	8	Check/seal ducts of the coolant lines
□	9	Check condensate drain hose for free passage and clean
□	10	Check that ventilator is securely fitted
□	11	Check that accessory parts (door contact switches) are securely fitted
□	12	Check insulation and piping for damage and/or abrasion spots
□	13	Check whether air inlet and outlet openings are clear
□	14	Reattach cover of the vaporiser
□	15	Check that all electrical clamping and plug connections and line connections are securely fitted
□	16	Reinsert mains plug
□	17	Restart the system
□	18	Check that service sticker is in place and correct
□	19	Inspection sticker affixed on power unit?

Date/signature (name of fitter)	Date/signature (name of branch manager)

Note: any soiling on the cell caused by maintenance must be cleaned up

Belgien
froid.viessmann.be

Dänemark
koele.viessmann.dk

Deutschland
kuehlen.viessmann.de

Estland
kylm.viessmann.ee

Finnland
kylma.viessmann.fi

Frankreich
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