GOVI® GmbH

EN | OPERATING MANUAL

10TN1 - 6TL1 - 20TN2
25TN2 - 15TL2

polarik®

The premium quality monoblock unit

Please read this manual before you install and operate the monoblock unit.
After reading the operating manual, keep it in a safe place for future reference.

GOVI GmbH

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Contents

1 General points

GOVI provides this manual for information purposes only. The information supplied in this manual should at no time be regarded as all-inclusive or covering all contingencies. For further information, please contact your GOVI contact person.

To ensure the durability of GOVI products, please follow the instructions in this manual.

1.1 Intended use

This monoblock unit is designed for use in cold rooms that are not exposed to any explosion or fire hazard. In order to perform its function, the monoblock unit is attached to the ceiling of the cold room by means of mechanical fastening systems.

- The monoblock unit is not designed for operation in locations classed as AP.PE EEx (explosion hazard).
- The monoblock unit is not designed for use in places exposed to fire hazard.
- The monoblock unit is designed for indoor use only.

The monoblock unit is not intended for any use other than as described above. All other usage shall be considered improper, and is either prohibited or requires the approval/permission of the manufacturer.

Unauthorised modification or manipulation of the monoblock unit will immediately void GOVI's warranty, obligations, unless GOVI has granted express written consent in advance. GOVI shall accept no liability for personal injury or material damage resulting from unauthorised modification.

"Intended purpose" also includes compliance with specified maintenance and repair-work requirements.
*See section **10** "Maintenance" (page **40**).*

1.2 Conditions of use

Ensure that the cold room in which you intend to install the monoblock unit is properly ventilated and fitted with an extraction system. Ensure also that you leave sufficient space for proper maintenance access.

Do not expose the monoblock unit to direct sunlight.

Ensure proper air circulation when placing items inside the refrigerated unit, and be careful not to block the refrigeration-unit evaporator.
DO NOT place heat-emitting items in the refrigerated unit.

1.3 Personnel

All persons engaged to work on the monoblock unit as described in this operating manual must be suitably trained and qualified, and able to assess the work to be carried out and identify possible hazards.

1.4 Spare parts

Use only original spare parts or parts approved by GOVI. Please note that spare parts and accessories not supplied by GOVI are neither tested nor approved. GOVI can accept no responsibility or warranty liability for loss or damage arising from the use of non-original spare parts.

1.5 Environmental regulations

GOVI supplies the monoblock unit ready-filled with refrigerant.

If you detect any fault in the refrigerant circuit, or signs of leakage from the monoblock unit, have the device examined and repaired by a qualified specialist.

DO NOT allow refrigerant to escape into the open air.

Please read the safety instructions and hazard warnings in *section **2.3** "Safety and hazard precautions" (page **8**)*, as well as the manufacturer's data sheet for the refrigerant concerned. The corresponding data sheets can be downloaded from the GOVI website.

Dispose of defective refrigeration units and drained-off refrigerant in accordance with applicable environmental regulations.

1.6 Disposal of the unit

WARNING

Incorrect dismantling of the monoblock unit may result in personal-injury hazard or danger to the environment.

Engage only trained and qualified specialists to disassemble the monoblock unit.

Take special care when handling the refrigerant.

The customer is responsible for proper disposal of the monoblock unit.

When you eventually scrap the monoblock unit, follow the corresponding local waste-disposal regulations, and engage, if necessary, the services of a specialist organisation.

Designation	Material
Structure	sheet steel, ferrous materials
Condenser, evaporator	Aluminium, copper
Electrical components	Copper, PVC, miscellaneous materials
Compressor	steel, copper and other materials
	compressor oil
Refrigerant (standard)	*see section 3 "Technical specifications" (page **13**)*
Refrigerant quantity	*see section 3 "Technical specifi-cations" (page **13**)*
Coating	Epoxide compound

Tab. 1: List of materials

2 Safety instructions

2.1 Safety Messages and Safety Alert Symbols

DANGER

Failure to observe these instructions is likely to result in irreversible, or even fatal, injury.

WARNING

Failure to observe these instructions may result in irreversible, or even fatal, injury.

CAUTION

Failure to observe these instructions may result in personal injury and/or damage to equipment or the environment.

2.2 Other terms and symbols

"Note" texts do not contain any safety-related items.

Items marked "Note" contain helpful tips, as well as additional information.

2.3 Safety and hazard precautions

WARNING

Electrical hazard

Before starting work of any kind on the monoblock unit, disconnect it from the power supply and ensure that it cannot be reactivated by accident.

Take suitable steps to prevent the monoblock unit from being switched back on while work is in progress.

WARNING

Electrical hazard

Strictly observe the following safety rules when working on the monoblock unit's electrical system:

- **Switch OFF.**
- **Block the switch to prevent accidental reactivation.**
- **Disconnect the power supply.**
- **Connect to earth (ground) and short-circuit.**
- **Cover or isolate all nearby live components.**

Electrical connection of the monoblock unit must be carried out by a qualified electrician.

WARNING

Toxic gas hazard

The refrigerant contained in the monoblock unit may produce toxic fumes if exposed to a naked flame or an electrical spark. These fumes are severe respiratory irritants, potentially capable of causing death.

The refrigerant tends to displace air and can cause oxygen depletion, which may result in death by suffocation.

Take special careful when working on the monoblock unit, particularly in an enclosed or confined space with a limited supply of fresh air.

WARNING

Fire and explosion hazard from flammable materials.

Avoid open fire, electrical sparks and ignition sources.

DO NOT smoke Observe fire/explosion-prevention measures.

WARNING

Danger arising from unauthorised modification

DO NOT drill any extra holes into the monoblock unit, as this may damage important components. Damage to electrical wiring or refrigerant conduits may cause a fire.

WARNING

Risk of damage to health from leaking refrigerant

Liquid refrigerant or fumes may leak out during maintenance or repair work involving the refrigerant circuit. These emissions can pose a threat to human health and the environment.

Always use suitable personal protective equipment (including goggles, respiratory mask and protective gloves) if leaking refrigerant is present.

CAUTION

Burn hazard

Certain parts of the monoblock unit (e.g. the condenser, evaporator and tubes) may still be hot after operation.

Let them cool down sufficiently before starting work on the monoblock unit.

CAUTION

Risk of long-term damage to the environment

The operating materials (refrigerant and compressor oil) are NOT biodegradable. Observe the safety data sheet or operating instructions of the materials used.

Observe the corresponding local environmental regulations when disposing of items that have been contaminated with operating materials.

CAUTION

Risk of injury from sharp edges and rotating parts

Keep your distance from rotating fan blades, and beware of the sharp sheet-metal edges under the main cover.

Contact with these sharp edges, especially the fan blades, can result in injury.

2.4 Refrigerant-handling precautions

Although the refrigerants used are classed as “safe”, you should still observe certain precautions during the handling, installation and maintenance of the monoblock unit.

Liquid refrigerants evaporate rapidly when released into the atmosphere, and quickly ice up everything that they touch.

Skin contact can lead to severe, frostbite-like injury.

2.5 First aid

In the event of eye contact with refrigerant or compressor oil, rinse the affected eye(s) immediately with abundant clean water (for at least ***15*** minutes), and seek medical attention.

In the event of burns, protect the affected area from further injuries, avoiding contact with the refrigerant and additional measures.

- Remove refrigerant-contaminated clothing and footwear.
- Thoroughly rinse off the refrigerant with abundant lukewarm water.
- DO NOT apply heat (e.g. by rubbing or with a hot-water bottle).
- Seek medical attention immediately. While you are waiting for help to arrive, cover the affected area as loosely as possible with a large sterile dressing.

In the event of inhalation of refrigerant, seek medical attention immediately and bring the injured person into the fresh air. Administer artificial respiration if required.

3 Technical data

The monoblock unit consists of a self-supporting chassis and a coated front cover made of galvanized sheet metal.

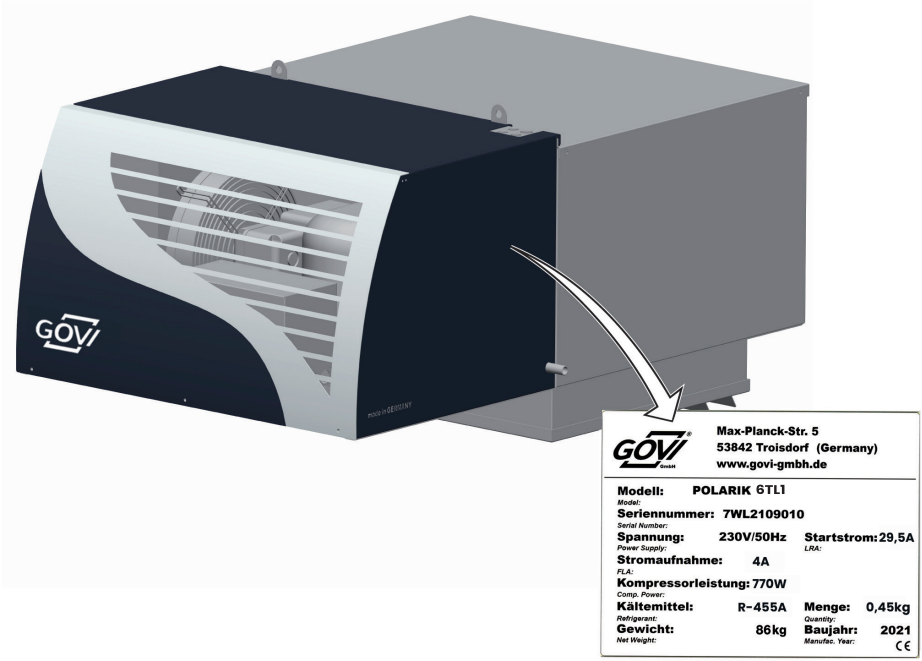


Fig. 1: Nameplate

The nameplate carries the serial number of the monoblock unit, together with other important technical data.

The nameplate is on the right-hand side of the main cover.

Always have the serial number of the monoblock unit to hand when contacting us, as this will ensure the fast and smooth processing of your enquiry.

3.1 Monoblock units 10TN1, 6TL1

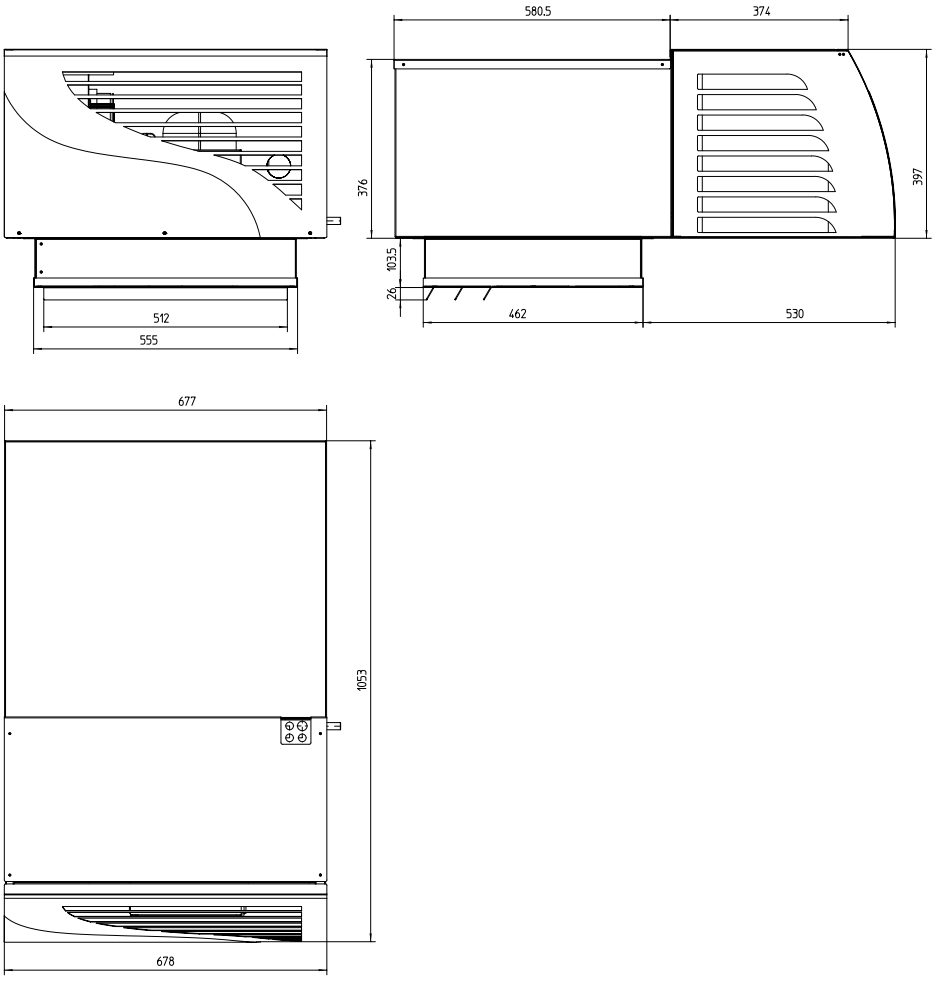


Fig. 2: ***Dimensions of 10TN1, 6TL1***

Designation	Unit	10TN1	6TL1
Temperature range of cold room	°C	PT +10 / -5	NT -15 / -25
Max. spatial volume of cold room	m^3	10	6
Power supply	V	1~230	
Frequency	Hz	50	
Refrigeration capacity	W	1740 (at ambient temperature of 32°C and cold room temperature of 2°C)	1099 (at ambient temperature of 32°C and cold room temperature of -18°C)
Heat output into surrounding area	W	2729	1826
Compressor power consumption	W	827	770
EER_1 (energy efficiency rating, based on the ratio of power consumption to cooling capacity)	-	2,29	1,37
Current consumption LRA	A	29,5	29,5
Current consumption FLA	A	5,7	4
Defrosting mode	-	Hot gas	
Evaporator-fan airflow	m^3/h	750	
Condenser-fan airflow	m^3/h	750	
Protection rating	IP	34	
Max. ambient temperature	°C	43	35
Refrigerant	-	R-455A	
GWP (global warming potential)	-	148	

Tab. 2: Technical data

Designation	Unit	10TN1	6TL1
CO_2 equivalent	t CO_2	0,66	0,66
Refrigerant quantity	g	450	450
Length of mains cable	m	2	
Evaporator-fan throw distance	m	2,5	
Dimensions	-	*See Fig. 2: "Dimensions of 10TN1 and 6TL1" (page 14)*	
Weight	kg	86	
Paint	RAL	9010 / 7024	

Tab. 2: Technical data

3.2 Monoblock units 20TN2, 25TN2, 15TL2

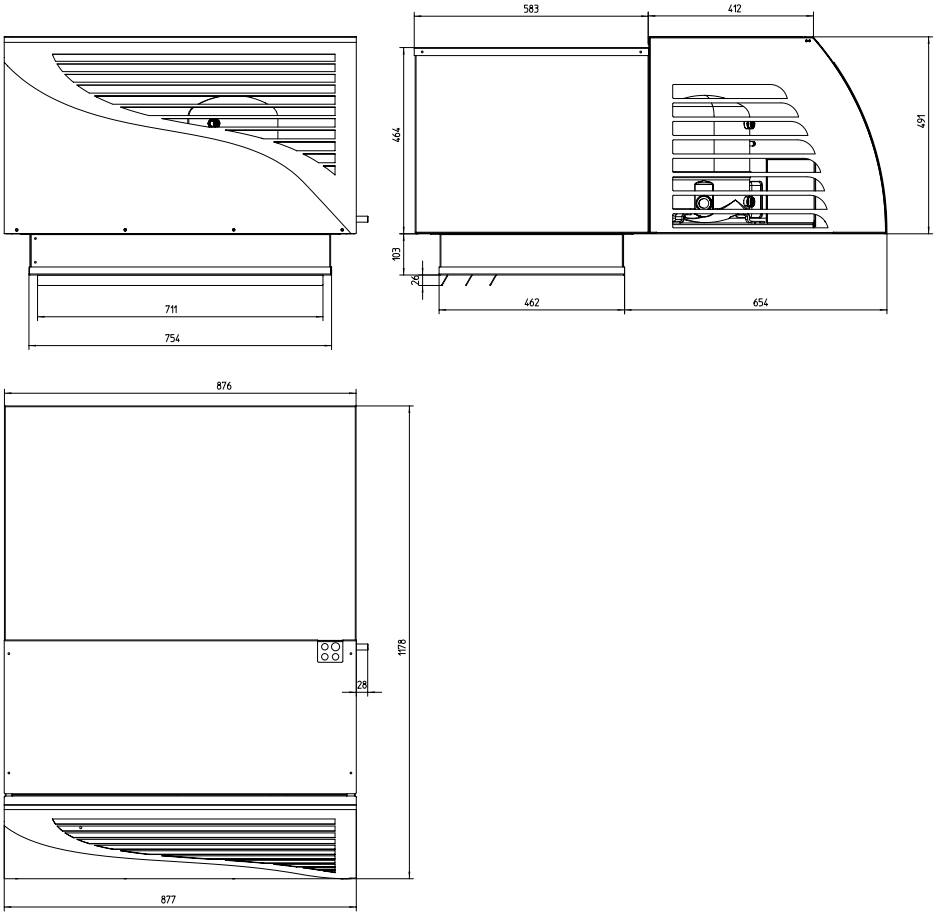


Fig. 3: ***Dimensions of 20TN2, 25TN2, 15TL2***

Designation	Unit	20TN2	25TN2	15TL2
Temperature range of cold room	°C	PT +10 / -5		NT -15 / -25
Max. spatial volume of cold room	m^3	20	25	15
Power supply	V	1~230	1~230	3~400
Frequency	Hz	50		
Refrigeration capacity	W	2290 (at ambient temperature of 32°C and cold room temperature of 2°C)	2808 (at ambient temperature of 32°C and cold room temperature of 2°C)	2289 (at ambient temperature of 32°C and cold room temperature of -18°C)
Heat output into surrounding area	W	3506	3857	3577
Compressor power consumption	W	996	1105	1346
EER_1 (energy efficiency rating, based on the ratio of power consumption to cooling capacity)	-	2,52	2,49	1,65
Current consumption (LRA)	A	33	42,2	31
Current consumption FLA	A	5,1	7,5	3,8
Defrosting mode	-	Hot gas		
Evaporator-fan airflow	m^3/h	1100		
Condenser-fan airflow	m^3/h	1100		
Protection rating	IP	34		
Max. ambient temperature	°C	43		35
Refrigerant	-	R-455A		

Tab. 3: Technical data

Designation	Unit	20TN2	25TN2	15TL2
GWP (global warming potential)	-	1,18	1,25	1,25
CO_2 equivalent	t CO_2	800	850	850
Refrigerant quantity	g	2		
Length of mains cable	m	4		
Evaporator-fan throw distance	m	4		
Dimensions	-	*See Fig. 3: "Dimensions of 20TN2, 25TN2 and 15TL2" (page 17)*		
Weight	kg	112	114	124
Paint	RAL	9010 / 7024		

Tab. 3: Technical data

4 Packing, transport and storage

The monoblock unit is secured in a pallet-mounted packing case for safe transportation.

CAUTION

Refrigerant leaks from damaged equipment can cause skin injuries and material damage.

In the event of severe external damage to the packing material and/or the monoblock unit itself, contact your local GOVI representative immediately.

DO NOT try to install the monoblock unit. DO NOT attempt to start it up.

1. Place the pallet on a flat surface. Examine the packing material and monoblock unit for transport damage.
2. Inform the carrier of any damage detected.
3. Take photographs of the damage, and add a corresponding note to the transport documents.
4. Check accompanying items for completeness.
5. Before disposing of the packing material, check for loose items forming part of the delivery.

4.1 Transport

CAUTION

Risk of equipment damage

The monoblock unit must be transported in an upright position.

Leave the monoblock unit standing upright for at least six hours before starting it up for the first time.

- Use only suitable lifting gear and transport equipment to raise and move the monoblock unit. For details of its weight, *see "**3** Technical data" (page **13**).*
- Lift the monoblock unit as described in *section "**6** Installation" (page **29**).*

4.2 Storage

Please observe the following points when placing the monoblock unit into storage:

- The monoblock unit must be placed in a horizontal position for storage.
- The storage location must be dry and dust-free.
- The storage temperature must not exceed ***60***°C.
- DO NOT store the monoblock unit near corrosive substances of any kind.
- Use a storage location away from direct sunlight.

5 System description

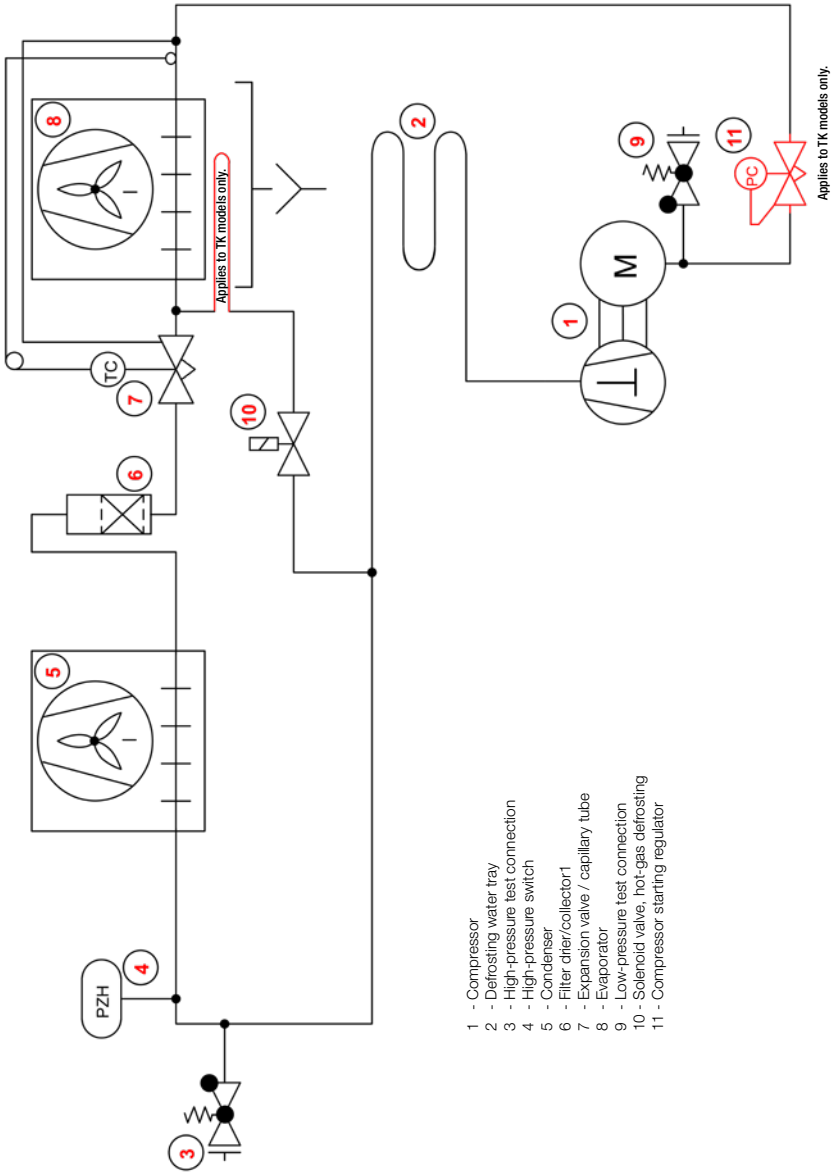


Fig. 5: Flowchart

The compressor ***1*** draws the gaseous vaporised refrigerant from the evaporator ***8*** and compresses it.

This makes the refrigerant temperature rise abruptly.

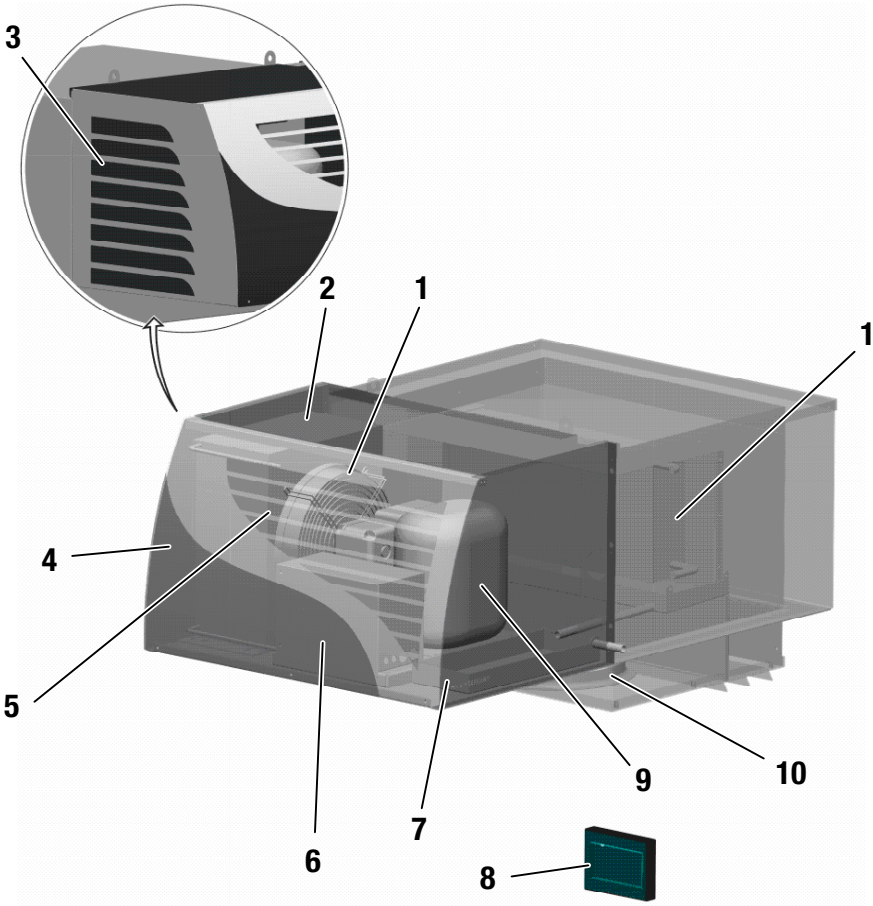
The vaporised refrigerant is transported from the compressor ***1*** to the condenser ***5***.

In the condenser ***5***, the refrigerant gas is cooled by ambient air, causing it to liquefy.

The heat removed from the cold room is then released into the atmosphere. The liquid refrigerant is then collected in the drier/collector ***6*** and stripped of moisture and impurities.

The throttle valve ***7*** regulates the flow quantity of liquid refrigerant for the evaporator ***8***.

The evaporator ***8*** is inside the cold room, with the condenser ***5*** outside.



1	Condenser fan	***5***	Air outlet	***9***	Compressor
2	Condenser	***6***	Control system	***10***	Evaporator fan
3	Air intake	***7***	Condensate tray	***11***	Evaporator
4	Main cover	***8***	Control unit		

Fig. 6: Overview of the monoblock unit

The main cover ***4*** covers the components outside the cold room. These include the control unit, the compressor, the condenser and the condenser fan, along with the condensate tray.

The evaporator ***11*** of the monoblock unit is inside the cold room.

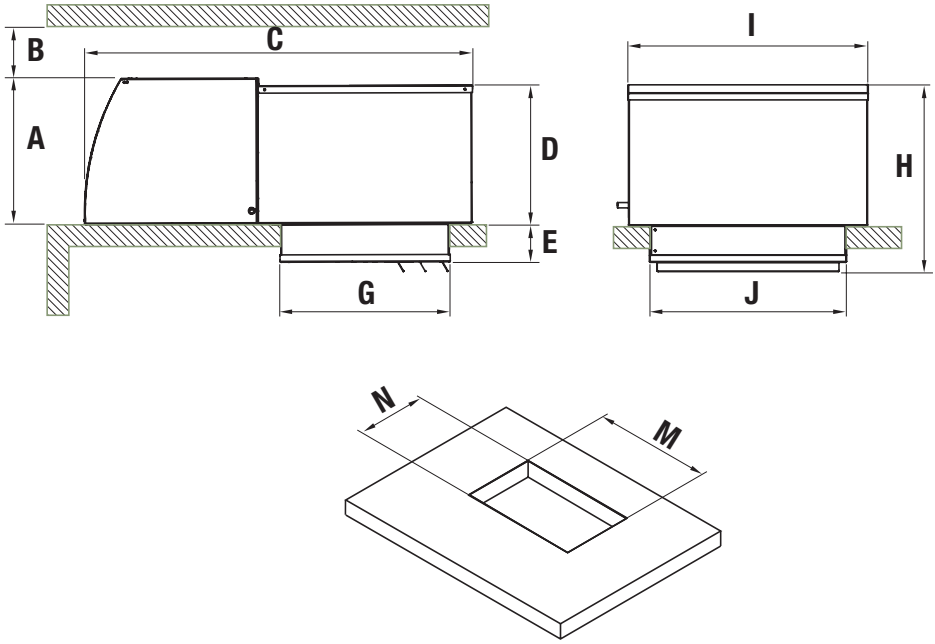
Keep the air intake ***3*** and outlet ***5*** clear at all times.
They must not be covered or obstructed.

6 Installation

6.1 Conditions for Installation

1. Read through the operating manual carefully in order to carry out installation correctly.
2. Verify that the monoblock unit has been delivered according to your order specifications, and that it is in good condition with no visible signs of damage.
3. Check to ensure that none of the necessary tools and additional items are missing, and that they are in proper operating condition.
4. Ensure also that the supporting elements of the monoblock unit are strong enough to support its weight.
5. Ensure that the crane hoist and lifting gear are of the right size to support the load of the monoblock unit. For details of its weight, *see section **3** "Technical data" (page **13**).*
6. NB: Do not connect the power supply of the monoblock unit before first completing the installation of the unit and its accessories.
7. Do not allow the ceiling and inside of the cold room to be soiled or damaged by the swarf and other fragments that result from cutting and drilling of the sheet metal.

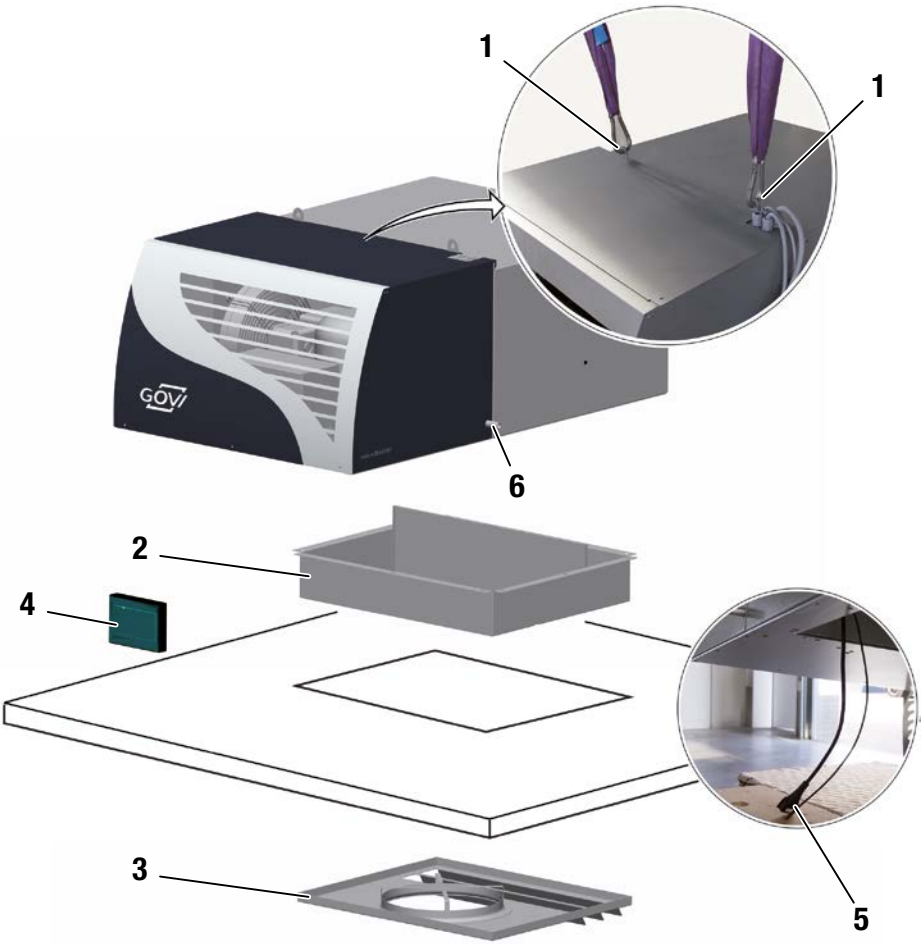
6.2 Installation of the unit



Model	A	B	C	D	E	G	H	I	J	M	N
TN1/TL1	397	250	1053	376	104	462	527	677	555	467	560
TN2/TL2	491		1178	464	103		620	877	754		759

Fig. 7: Installation, dimensions (in mm)

1. Place the cold room on a dry, clean level surface..
2. Make sure that the cold room is level.
3. Remove all loose items from the installation area.
4. Prepare all the required installation tools and other equipment and keep them to hand.
5. Make cut-outs in the ceiling of the cold room accordingly, *see "Fig. **7**: Installation, dimensions (in mm)" (page **30**)*.



1 Lifting ring
2 Installation frame
3 Cover (with evaporator fan)
4 Control panel
5 Evaporator-fan wiring
6 Overflow pipe

Fig. 8: Installation

6. Mount the installation frame ***2*** in the ceiling of the cold room.
7. Ensure that the mating surface between the cold room ceiling and monoblock unit is level and free of impurities.
8. Keep the monoblock unit upright at all times during installation, including lifting operations.
9. Attach suitable lifting gear at the lifting rings ***1***.
10. Place the monoblock unit on the installation frame on the cold room ceiling ***2*** using a hoist and loading crane.
11. Detach the lifting gear.
12. Connect wiring ***5*** between monoblock unit and evaporator fan in cover ***3***.
13. Mount cover ***3*** together with the evaporator fan.
14. Mount the control panel ***4*** in an easily accessible place on the cold room wall.
15. Connect the condensed water drain hose to the overflow pipe ***6***.
16. Connect the monoblock unit and the cold room lamp to the power supply as shown in the wiring diagram.
17. Carry out function testing.

6.3 Installation of accessories

As an option, a lamp inside the cold room can be connected to the monoblock unit and operated from it.

It is not necessary to open the unit when installing the lighting system. The power supply connection has been preset up at the factory. The interior-lighting connection cable is on the top of the unit, next to the cable for the power supply.

7 Operating elements

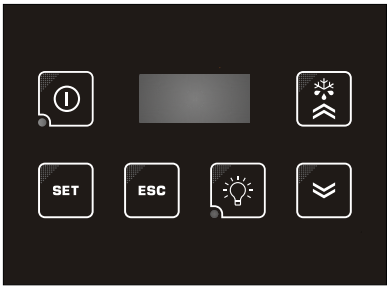


Fig. 9: Control panel

The following functions can be displayed or called up via the control panel:

- Monoblock unit on/off function
- Display and selection of nominal temperature
- cold room lamp on/off function
- Defrost function

The control panel consists of the LED display and function keys.

7.1 LED-Indicator

Symbol	Name	Operation	Meaning
	Compressor	Permanently on	■ Compressor is activated.
		Flashing	■ The compressor is switched on and in its startup phase.
	Defrosting	Permanently on	■ Defrost function is active.
		-	-
	Fan	Permanently on	■ Fan is on.
	Alarm	Permanently on	■ Error message present.
		Flashing	■ Error message has been acknowledged.
AUX	AUX	-	-

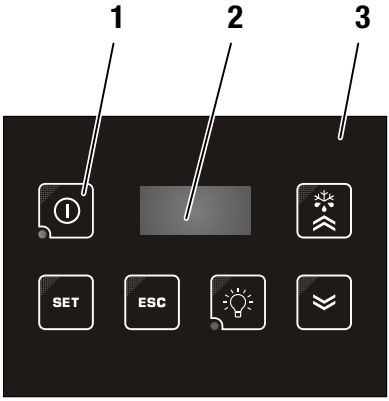
Tab. 5: LED indicator

7.2 Function keys

Symbol	Press briefly	Press and hold (> 5 s)
	■ Cancellation of selected function	-
	■ Display of current error messages ■ Access to Machine Status menu ■ Confirmation of commands	■ Access to Programming menu (password-protected)
	-	■ Switch device on/off
	■ Scroll through menu options ■ Increase settings	■ Activation of manual defrost function
	■ Scroll through menu options ■ Reduced settings	-
	■ Switch cold room lamp on/off	-

Tab. 6: Function keys

8 Commissioning



1 Function key ***2*** Display ***3*** Control panel

Fig. 10: Commissioning

CAUTION

Switch the monoblock unit off immediately if you detect smoke or unusual smells or noises coming from the unit.

Contact GOVI Customer Service before restarting.

1. Switch on the monoblock unit.
   a. Press function key ***1***. The LED of function key ***1*** lights up to indicate that operating voltage is present.
   b. The compressor is started. The corresponding symbol on the display ***2*** flashes until the compressor is ready for operation.
   c. The display ***2*** shows the nominal temperature.
2. Release the key lock, *see section **9.2** "Unblocking the function keys" (page **38**).*
3. Set the nominal temperature, *see section **9.3** "Setting the nominal temperature" (page **39**).*

4. Make sure that:
   a. the installation opening and drill holes in the cold room wall are airtight,
   b. the air intakes and outlets on the condenser and evaporator are not obstructed or blocked,
   c. the main cover is securely fitted and screwed on,
   d. the condensation water drain hose is properly connected to the overflow pipe,
   e. all screws are securely fastened and
   f. the system is operating correctly.

9 Operation

CAUTION

Switch the monoblock unit off immediately if you detect smoke or unusual smells or noises coming from the unit.

Contact GOVI Customer Service before restarting.

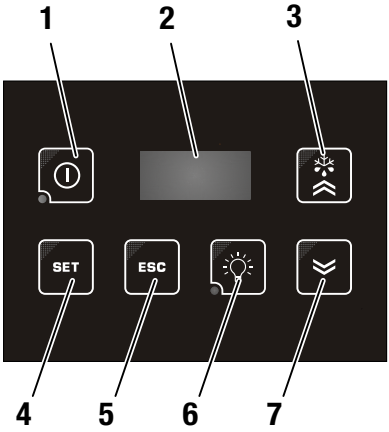


Fig. 11: Control panel

9.1 Switching the monoblock unit on and off

1. To switch on, press function key ***1*** until the key LED lights up.
2. To switch off, press function key ***1*** until the key LED goes out.

9.2 Unblocking the function keys

Push any function key on the control panel, and keep it pressed for more than ***5*** seconds.

9.3 Setting the nominal temperature

The monoblock unit must be switched on and the key-lock function disabled.

1. Briefly press function key ***4***. “Set” will appear on display ***2***.
2. Press function key ***4*** again. The current nominal temperature will appear on display ***2***.

3. To increase the nominal temperature, press function key ***3***; to reduce it, press function key ***7***. Each press of the button changes the nominal-temperature setting by ***0.1***°. To speed up the rate of change, keep function key ***3*** or ***4***. This function has a slight delay.

4. When the desired setting is reached, press function key ***4*** again to store the displayed value as a setpoint. The display ***2*** will now show the current temperature in the cold room.

9.4 Switching the lamp on and off

The monoblock unit must be switched on and the key-lock function disabled.

1. To switch on, press function key ***6*** until the key LED lights up.
2. To switch off, press function key ***6*** until the key LED goes out.

9.5 Carrying out a manual defrost

The monoblock unit must be switched on and the key-lock function disabled.

1. Press and hold function key ***3*** for more than ***5*** seconds, or until a signal sounds. Manual defrosting is now started.

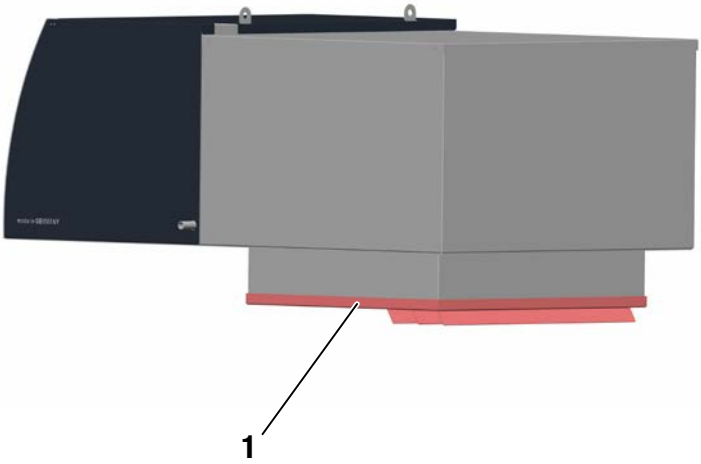
10 Maintenance

Carry out maintenance

- **every six months, or**
- **after a long period of time without operation, or**
- **after operation in a dusty or damp environment.**

Failure to carry out proper maintenance can lead to malfunctioning of, and damage to, the monoblock unit.

10.1 Function testing of the evaporator fan



1 Cover with evaporator fan

Fig. 12: Function testing of the evaporator fan

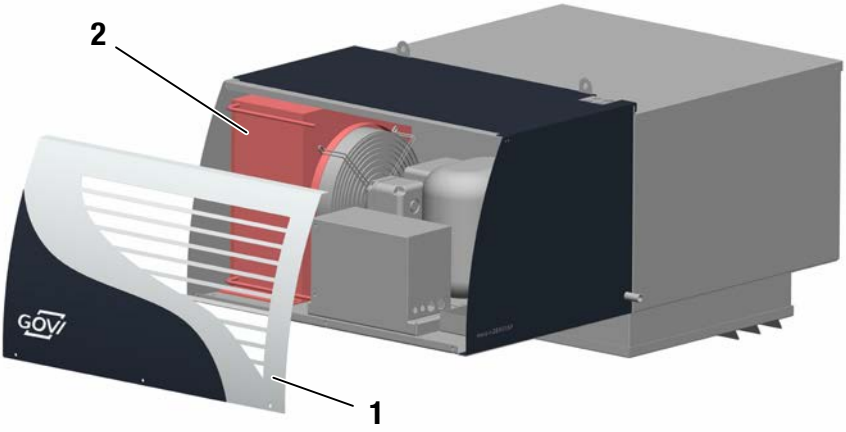
1. Switch on the monoblock unit.
2. Check that the evaporator fan is working properly.

10.2 Cleaning the condenser

WARNING

Danger of fire and explosion

DO NOT use flammable solvents such as alcohol, benzene or thinners for cleaning.



1 Main cover ***2*** Condenser

Fig. 13: Cleaning the condenser

1. Undo the three screws and remove the main cover ***1***.
2. Clean the condenser ***2*** by blowing in compressed air through the cooling fins, working from the left to the right.
3. You may have to realign the fins on the condenser ***2*** after cleaning.
4. Secure the main cover ***1*** with three screws.
5. Switch on the voltage again and carry out a functional test of the monoblock unit.

11 Faults

11.1 Troubleshooting

Error or fault	Problem	Solution
Monoblock unit does not cool sufficiently.	Surrounding temperature too high.	■ Check the cold room for leaks. ■ Ensure adequate ventilation and air circulation in the surrounding area.
	Leaking refrigerant.	■ Contact GOVI Customer Service.
	Condenser is blocked.	■ Clean the condenser, *see section 10.1.2 “Cleaning the condenser” (page 42)*.
	Fans not working.	■ Contact GOVI Customer Service.
	Air circulation blocked on the outside (condenser area) of the monoblock unit.	■ Ensure that there is sufficient space between the monoblock unit and adjacent items. ■ Remove all loose obstacles likely to obstruct air circulation.
	Insufficient air circulation inside the cold room.	■ Check the positioning of items in the cold room. ■ Position items in such a way that they do not impede air circulation.
The monoblock unit switches itself on and off automatically.	No nominal-temperature setting.	■ Set the nominal temperature, *see section 9.3 “Setting the nominal temperature” (page 39).*
	Temperature sensor is defective.	■ Contact GOVI Customer Service.

Tab. 7: Troubleshooting

Error or fault	Problem	Solution
	High-pressure switch is triggered.	■ Contact GOVI Customer Service.
Water dripping from monoblock unit.	Drain hose blocked.	■ Blow out drain hose with compressed air to remove impurities.
Ice build-up on evaporator.	cold room door is open.	■ Close cold room door.
	Evaporator fan defective.	■ Contact GOVI Customer Service.
	Automatic defrost not working.	■ Contact GOVI Customer Service.
cold room lamp not working.	No power supply.	■ Ensure that the monoblock unit is switched on, *see section 9.1 "Switching the monoblock unit on and off" (page 38)*. ■ Ensure that the lamp is switched on, *see section 9.4 "Turning the lamp on and off" (page 39)*. ■ Check functioning of cold room lamp. ■ Check lamp wiring. ■ Contact GOVI Customer Service.

Tab. 7: Troubleshooting

11.2 Fehlercodes

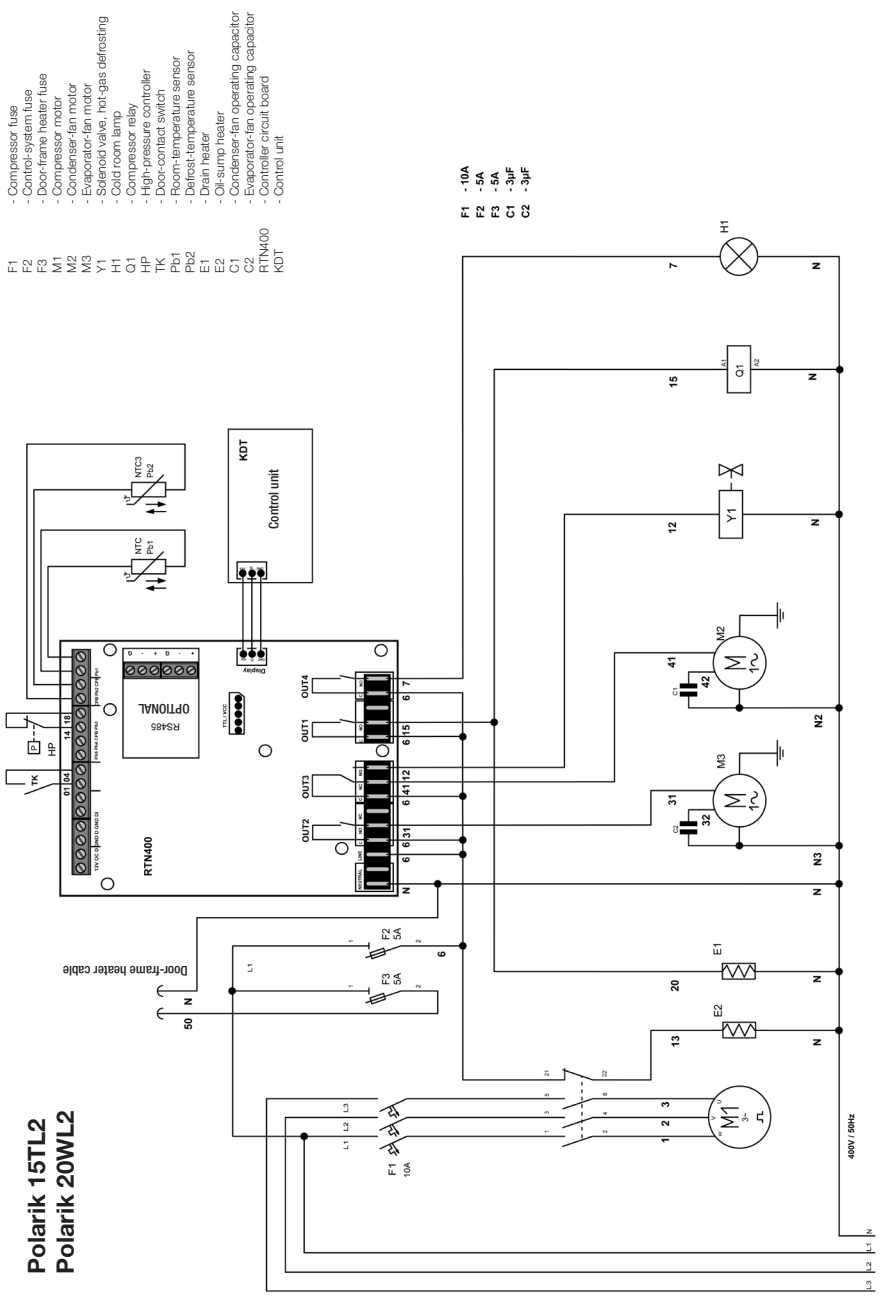
Error code	Problem	Solution
E1	Defective temperature sensor in cooling cell.	■ Contact GOVI Customer Service.
E2	Defective defrost-temperature sensor.	■ Contact GOVI Customer Service.
AH1	Alarm: Temperature too high.	■ Contact GOVI Customer Service.
AL1	Alarm: Temperature too low.	■ Contact GOVI Customer Service.
HPA	High-pressure switch triggered.	■ Contact GOVI Customer Service.

Tab. 8: Error code

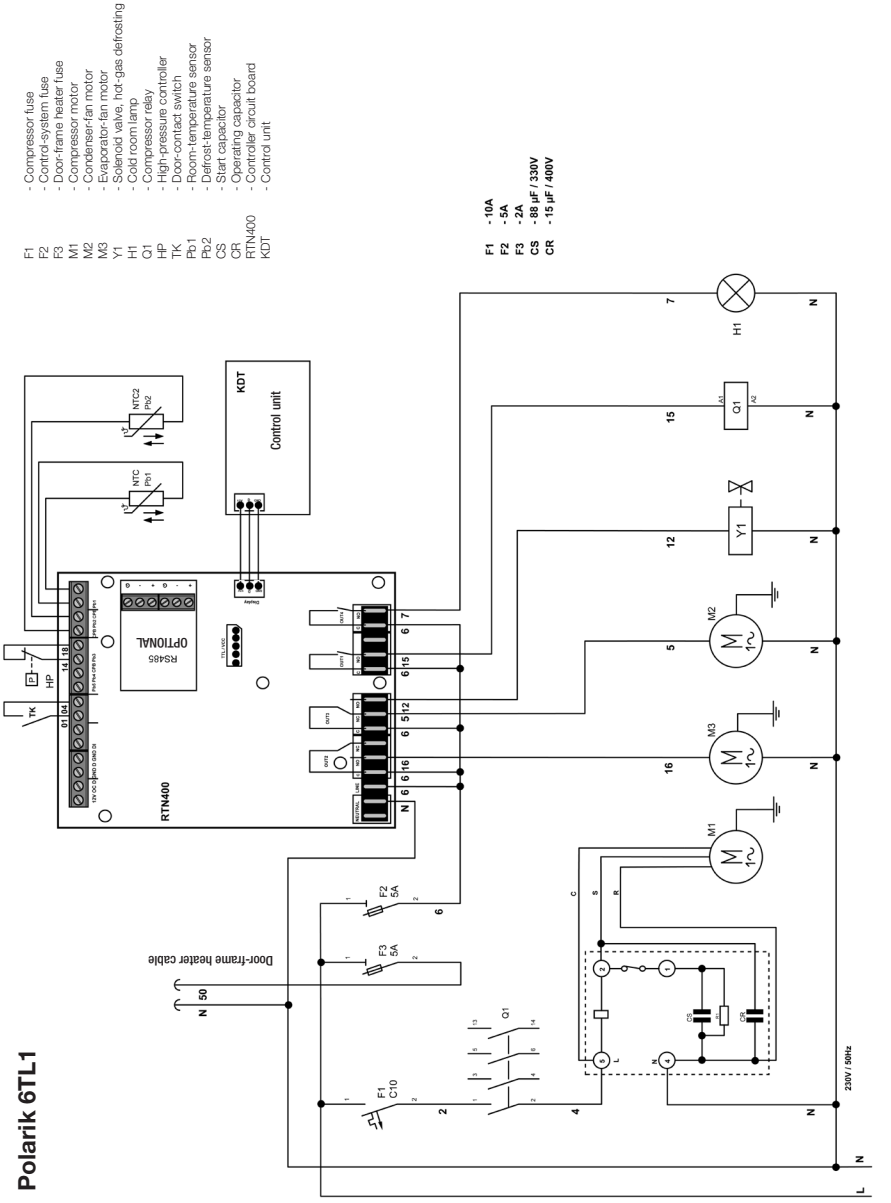
12.1 Appendix

12.2 Wiring diagrams

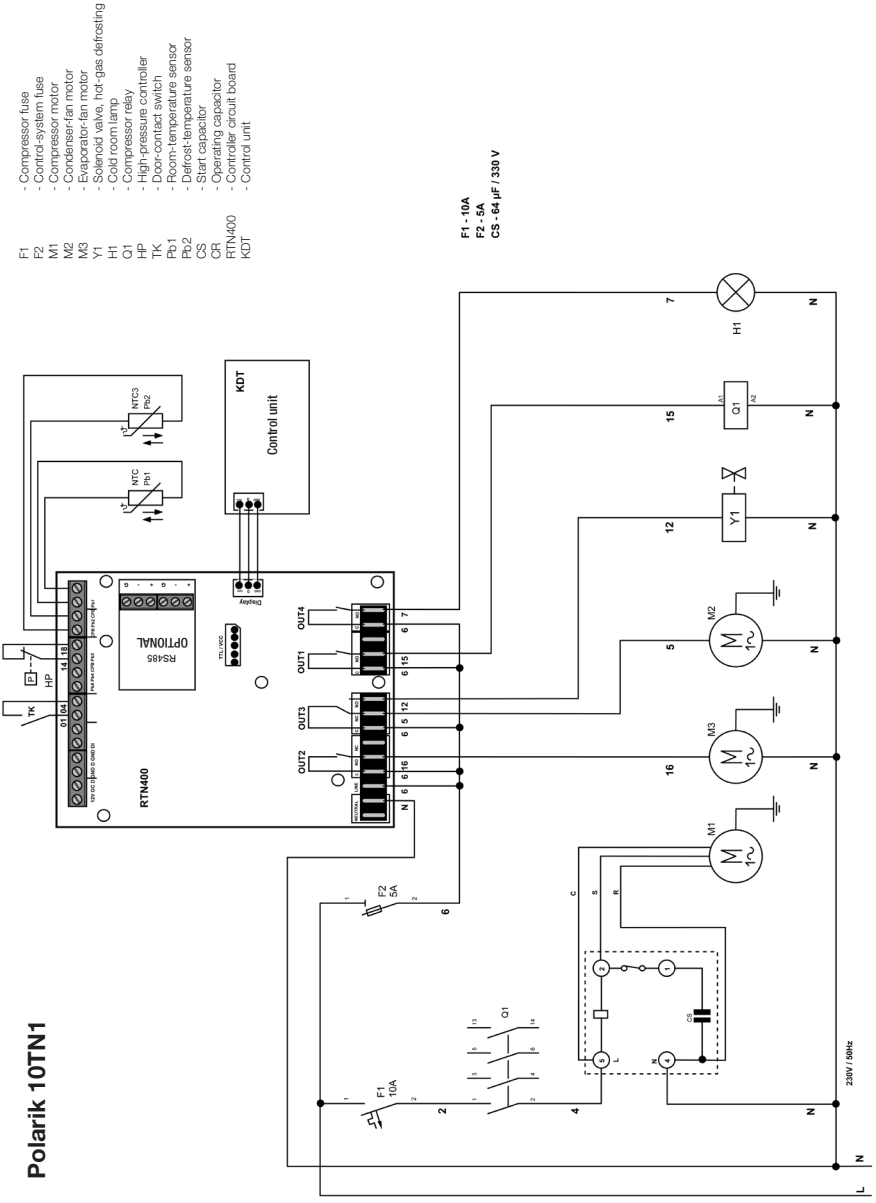
The corresponding wiring diagram is also attached to the device, on the inside of the cover.


F1 - Compressor fuse
F2 - Control-system fuse
F3 - Door-frame heater fuse
M1 - Compressor motor
M2 - Condenser-fan motor
M3 - Evaporator-fan motor
Y1 - Solenoid valve, hot-gas defrosting
H1 - Cold room lamp
Q1 - Compressor relay
HP - High-pressure controller
TK - Door-contact switch
Pb1 - Room-temperature sensor
Pb2 - Defrost-temperature sensor
E1 - Drain heater
E2 - Oil-sump heater
C1 - Condenser-fan operating capacitor
C2 - Evaporator-fan operating capacitor
RTN400 - Controller circuit board
KDT - Control unit
F1 - 10A
F2 - 5A
F3 - 5A
C1 - 3µF
C2 - 3µF
Polarik 15TL2
Polarik 20WL2
RTN400
OPTIONAL
RS485
Control unit
KDT
Door-frame heater cable
400V / 50Hz

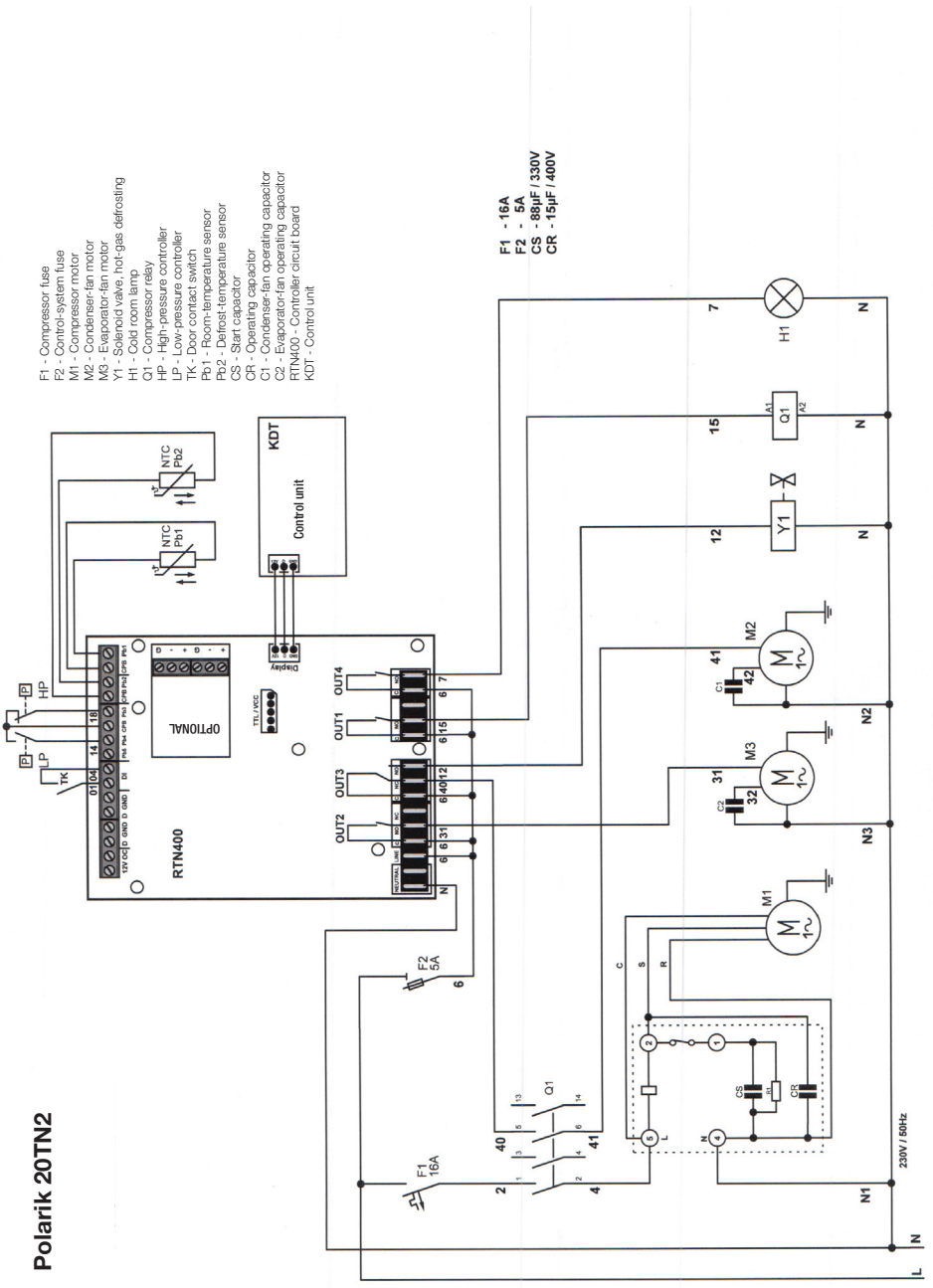
Polarik 6TL1



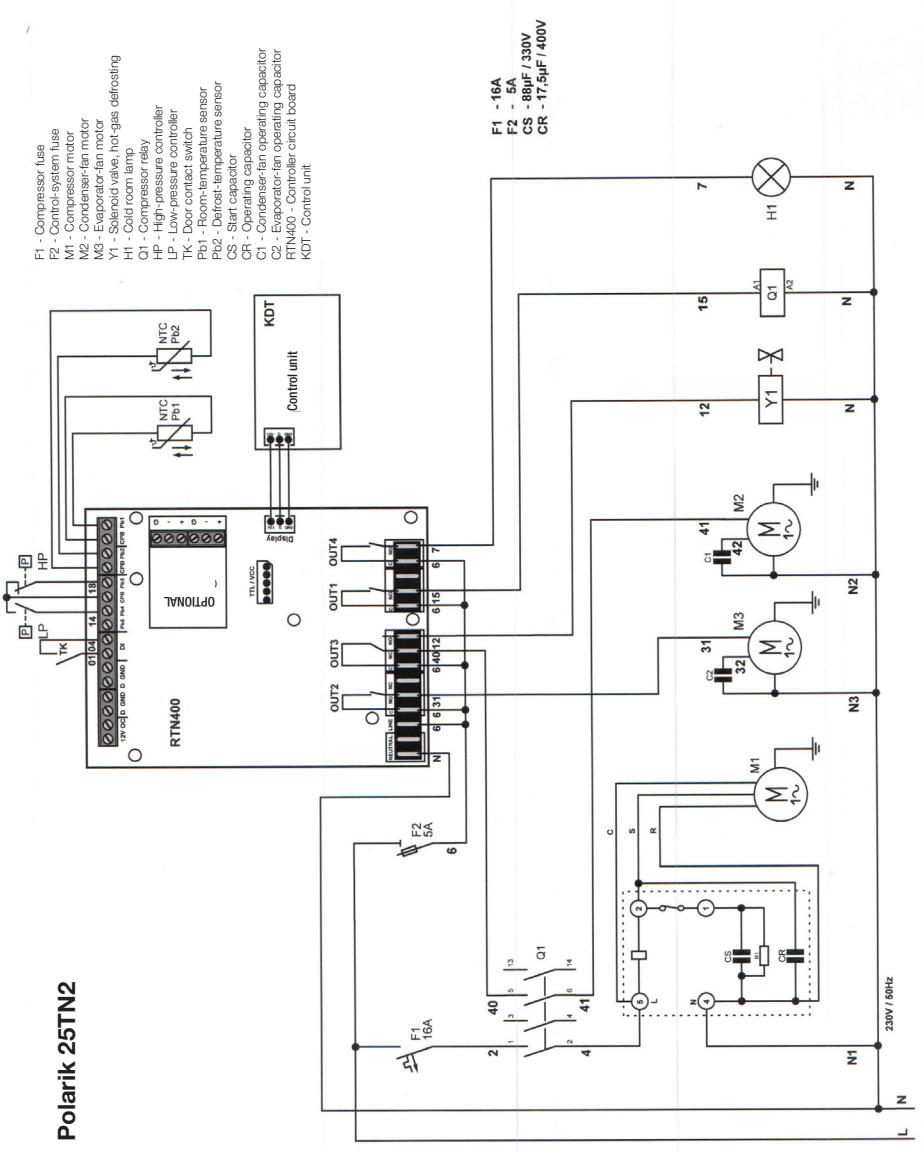
Polarik 10TN1



Polarik 20TN2



Polarik 25TN2



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