



# Dehumidifier IceDry1400 AirC

User manual

T-IceDy1400-I2412

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Original instructions



**IMPORTANT**

Read these instructions before using the product.

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# 1. Important user information

## 1.1. Intended use

Munters dehumidifiers are intended to be used for the dehumidification of air. Any other use of the unit, or use which is contrary to the instructions given in this manual, can cause personal injury and damage to the unit and other property.

No modification of the unit is allowed without prior approval by Munters. Installation of additional devices is only allowed after written agreement by Munters.

## 1.2. Warranty

The warranty is based on the terms of sale and delivery of Munters. The warranty is not valid if repairs or modifications are carried out without the written agreement of Munters, or if the unit does not operate under the conditions agreed with Munters.

The energies supplied (electricity, gas etc.) must be as specified for the unit.

The warranty is limited to a free exchange of parts or components which have failed as a result of defects in materials or workmanship.

All warranty claims must include proof that the fault has occurred within the warranty period and that the unit has been used in accordance with the specifications. All claims must specify the unit type and serial number. This information is stamped on the identification label.

Commissioning/Start-up inspection "S" by Munters is mandatory to validate the full warranty. See the maintenance schedule in section *Service and maintenance*.

It is a condition of the warranty that the unit for the full warranty period is serviced and maintained by a qualified Munters engineer or Munters approved engineer. The service and maintenance must be documented for the warranty to be valid.

## 1.3. Safety information

Information about dangers are in this manual indicated by the common hazard symbol:



### **WARNING**

Indicates a possible danger that can lead to personal injury.



### **CAUTION**

Indicates a possible danger that can lead to damage to the unit or other property, or cause environmental damage.

### **NOTE**

Highlights supplementary information for optimal use of the unit.

## 1.4. Copyright

The contents of this manual can be changed without prior notice.



### **NOTE**

This manual contains information which is protected by copyright laws. It is not allowed to reproduce or transmit any part of this manual without written consent from Munters.

*Munters Europe AB, P.O. Box 1150, SE-16426 KISTA Sweden*

## 2. Introduction

### 2.1. About this manual

This manual is written for the user of the dehumidifier. It contains necessary information for how to install and use the dehumidifier in a safe and efficient way.

Read through the manual before the dehumidifier is installed and used.

Contact your nearest Munters office if you have any questions about the installation or the use of your dehumidifier.

This manual must be stored in a permanent location close to the dehumidifier.

### 2.2. Unintended use

- The dehumidifier is not intended for outdoor installation.
- The dehumidifier is not intended for use in classified areas where explosion safety compliant equipment is required.
- The dehumidifier must not be installed near any heat generating devices that can cause damage to the equipment.
- The dehumidifier is not intended for treating air polluted with solvents, acids, bases or substances with a high boiling point. Dust or other aggressive, corrosive or abrasive particles must also be avoided.

### 2.3. Safety

The information in this manual shall in no way take precedence over individual responsibilities or local regulations.

During operation and other work with a machine it is always the responsibility of the individual to consider:

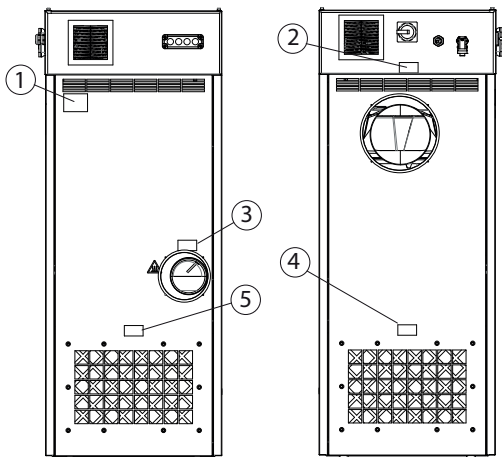
- The safety of all persons concerned.
- The safety of the unit and other property.
- The protection of the environment.

**WARNING**

- All electrical installations must be done by an authorized electrician in accordance with local regulations. An incorrect installation can cause electrical shock hazards and damage to the unit.
- The unit must never be connected to another voltage or frequency than what is specified on the identification plate. Too high line voltage can cause electrical shock hazards and damage to the unit.
- Rotating fan blades can cause serious injury. Only operate the unit with the air ducts connected.
- The unit can restart automatically after a power cut. Make sure that the main power switch is set and locked in the OFF position before any service or maintenance work starts.
- Use only approved lifting equipment to prevent personal injury and damage to the unit.
- Move the unit carefully to prevent it from overturning.
- There is a fire hazard, or risk of unit malfunction, if filters are maintained insufficiently or incorrectly.
- When working with filters or in a dusty area: To protect the user from dust, wear a suitable CE marked face mask selected and fitted in accordance with the applicable safety standards.
- If the rotor is to be cut in pieces, wear a suitable CE marked face mask selected and fitted in accordance with the applicable safety standards to protect from the dust.



## 2.4. Marking

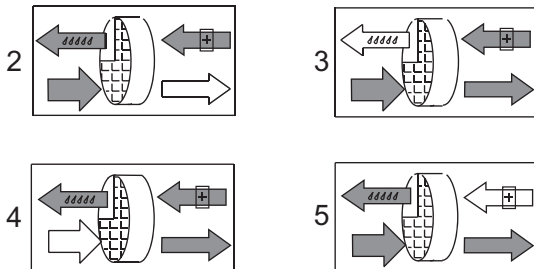


1. Unit identification plate
2. Dry air outlet
3. Wet air outlet
4. Process air inlet
5. Reactivation air inlet

The first four digits in the fabrication number indicate year and week (YYWW) of production for the unit.

**2410** XXXXXX XXXXXX

Labels:



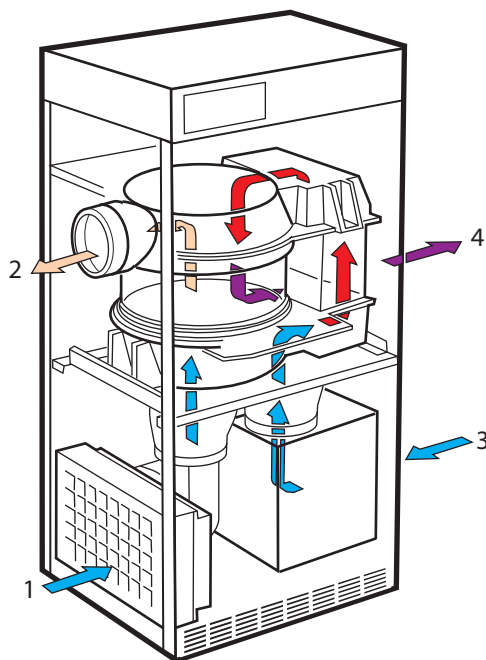
## 3. Dehumidifier design

### 3.1. Product description

The desiccant dehumidifiers in the ML series have been developed to effectively dehumidify the air in environments requiring low air humidity.

The dehumidifier is equipped with an encapsulated rotor unit. The rotor casing is constructed of durable thermoset plastic and contains isolated sections that provide a precise balance for the dehumidification, reactivation and heat recovery airflows.

### 3.2. Function overview



*Internal airflows*

1. Process air
2. Dry air
3. Reactivation air
4. Wet air

The desiccant rotor is the adsorption dehumidifying component in the unit. The rotor structure is comprised of a large number of small air channels.

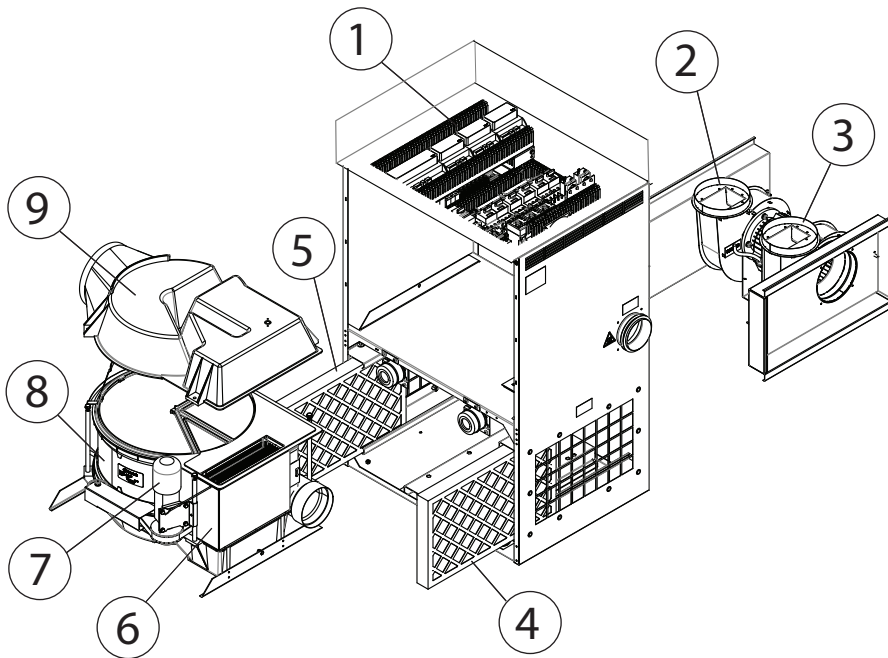
The desiccant rotor is made of a composite material that is highly effective in attracting and retaining water vapour. The rotor is divided into zones.

The airflow to be dehumidified, **process air**, passes through the largest zone of the rotor and then leaves the rotor as **dry air**. Since the rotor rotates slowly, the incoming air always meets a dry zone on the rotor, thus creating a continuous dehumidification process.

The airflow used to dry the rotor, **reactivation air**, is heated. The reactivation air passes through the rotor in the opposite direction to the process air and leaves the rotor as **wet air** (warm, moist air).

This principle enables the dehumidifier to work effectively, even at freezing temperatures.

### 3.3. Main components



1.	Electrical panel	6.	Reactivation heater
2.	Process fan	7.	Drive motor
3.	Reactivation fan	8.	Rotor
4.	Reactivation air filter	9.	Upper rotor cover
5.	Process air filter		

## 4. Transport, delivery inspection and storage

### 4.1. Transport

The dehumidifier is delivered on a pallet and must be handled carefully. All panel doors on the unit must be closed during transport. Provided that the dehumidifier is still secured to its delivery pallet, it can be moved using a fork-lift truck.



#### **WARNING**

Move the unit carefully to prevent it from overturning.

Weight of the dehumidifier can be found in section *Technical data*.

### 4.2. Delivery inspection

- Do an inspection of the delivery and compare with the delivery note, order confirmation or other delivery documentation. Make sure that everything is included and nothing is damaged.
- Contact Munters immediately if the delivery is not complete or damaged in order to avoid installation delays.
- Any damage to the packaging must be documented with photos before the packaging is removed.
- Remove all packaging material from the unit, and make sure that no damage has been made during transportation.
- Any damage to the unit must be documented with photos.
- Any visible damage must be reported in writing to Munters within 3 days and prior to installation of the unit.
- Discard the packaging material according to local regulations.

### 4.3. Storage

Follow these instructions if the unit is to be stored prior to installation:

- Place the unit in an upright position on a horizontal surface.
- Re-use the packaging material to provide protection for the unit.
- Protect the unit from physical damage.
- Store the unit under cover and protect it from dust, rain and aggressive contaminants.

## 5. Installation

### 5.1. General

IceDry dehumidifiers are intended for installation in cold locations such as cold stores with ambient air down to minus 25 °C.

These conditions require that installation instructions are followed carefully as faulty installation can result in serious operational disturbances.

If the unit is to be put into storage prior to installation, see *section 4.3, Storing the equipment*. If there are any questions about installation details, please contact your local Munters office.

### 5.2. Safety



#### WARNING

- All electrical installations must be done by an authorized electrician in accordance with local regulations. An incorrect installation can cause electrical shock hazards and damage to the unit.
- The unit must never be connected to another voltage or frequency than what is specified on the identification plate. Too high line voltage can cause electrical shock hazards and damage to the unit.
- Move the unit carefully to prevent it from overturning.
- Use only approved lifting equipment to prevent personal injury and damage to the unit.
- Rotating fan blades can cause serious injury. Only operate the unit with the air ducts connected.



#### CAUTION

Do not sit, stand, or place any objects on the unit.

### 5.3. Site requirements

The dehumidifier is adapted to operation inside cold stores. The design intended operational temperatures are from -25°C to 0°C.

To achieve expected result from the installation the cold room must have insulated doors closed at any time not used to prevent moist warm air from entering the cold store.

It is important that the intended installation site meets the location and space requirements for the equipment in order to achieve the best possible performance and facilitate servicing.

Therefore, comply with the recommended service spaces, see *section 9.1, Dimensions and service space*.

**NOTE**

The unit may need to be removed from the cold store at certain service intervals. Have extra cables for unit connection available.

**5.4. Mirror handed duct connections**

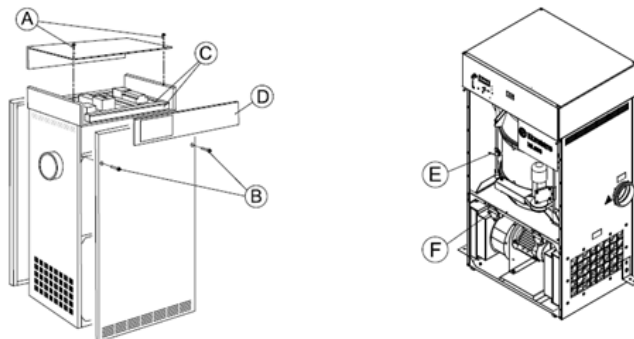
The front and back panels are interchangeable, so that the connections for process and dry air may be situated either on the left or right side of the unit.

The dehumidifiers are delivered with the process and dry air connections on the left side of the unit.

If it is required to change the orientation, so that the connections are on the right side of the unit, proceed as follows.

**WARNING**

Ensure that the main power is isolated from the dehumidifier prior to changing the orientation of the process and dry air connections.



1. Remove the two bolts (B) securing the front panel and carefully remove the panel.
2. Remove the two bolts securing the rear panel and gently remove the panel.
3. Remove the two bolts (A) and washers securing the control and top panels, then carefully remove the top panel.
4. Remove the cable duct covers (C), re-route the cables, and fit the control panel (D) onto the opposite side of the unit.
5. Refit the cable duct covers.
6. Loosen the rotor stop (E) and the two filter monitors (F) then remove the cables ties.
7. Fit the rotor stop on the opposite side of the unit and tie the cables
8. Fit the front, rear, and top panels in their new positions.

**5.5. Where to install the dehumidifier**

Select a place where the dehumidifier causes the least disturbance to the cold storage room activities while allowing for maintenance work such as process filter replacement.

Installing the unit on a base frame makes it easier to keep clean under the unit, but can also reduce the amount of dust contaminating the process filter to have the unit lifted up from the Dehumidifier IceDry1400 AirC 14 floor depending on the unit location.

When the unit is installed on a base frame, the base frame must be designed in such a way that the dehumidifier can be removed from the cold store/freezer.

The dehumidifier must be placed so that there is no risk of the process intake and filter icing up.

Ice normally forms near the doors and air-locks of the cold store where warm, humid air flows in.

Minimum open distance from door openings 3-4m, place the dehumidifier process inlet away from door opening to prevent ice from building up and reduce dust at the process filter.

Install the dehumidifier in such a way that the reactivation air and wet air ducts are as short as possible, max 1.5m to prevent condensation in ducts.

See section 4.7, *Installation examples — cold storage room (freezer)*.

## 5.6. Ducting

### 5.6.1. General recommendations

#### NOTE

Vibration reduction. If there is a need for a reduction of vibrations from the dehumidifier, contact Munters for instructions. Refer to standard EN 1299+A1:2008.

Due to the cold surroundings and risk of freezing, it is vital that all ducting is installed according to instructions. See also section 4.7, *Installation examples — cold storage room (freezer)*.

To facilitate easy transfer of the dehumidifier out of the cold-storage room for service, all duct connections should be easily disassembled. Should the dehumidifier, despite this recommendation, be installed in such a way that it cannot be easily removed for service.

#### NOTE

It is important that the minimum service space requirements are met, see 9.1, *Dimensions and service space*.

A vapour-tight connection between the wall and the duct is vital.

Preferably polyurethane foam should be used if the temperature is sufficiently high during application.

When installing ductwork between the dehumidifier and the inlet and outlet connections, the following recommendations should be observed:

- The length of ductwork should be kept as short as possible to minimize static air pressure losses.

- To maintain performance, all rigid process or reactivation air ductwork joints must be air and vapour tight.
- The design of the duct connections should facilitate easy disconnection of the unit for service outside the cold storage room if needed.
- Condensation easily builds up on the inside of the duct due to the high humidity of the reactivation air in and wet air leaving the unit. To avoid condensation the ductwork must be insulated.
- If screws are used for fixing ductwork pieces it may not go through the duct insulation to prevent thermal bridges.
- Ensure that access for operation and service is not restricted when designing and installing ducting. For more information, *see section 9.1, Dimensions, and service space.*
- To reduce noise and vibration being transmitted along rigid ductwork, good quality, airtight, and flexible connections should be fitted.
- Ducts mounted directly onto the dehumidifier should be adequately supported to minimize the load and stress due to weight and movement of the ducting. This is especially important for the wet air ducting.
- Dampers for balancing the air flow must be installed in the reactivation air inlet duct. Correct airflows are essential for maintaining the operating efficiency of the unit. For airflow adjustment details, *see section 6.3, Airflow check and adjustment.* If the airflow is too high through the dehumidifier reactivation, too much heater power will be used.
- The total resistance in the process and reactivation ductwork must not exceed the performance rating of the fans fitted in the dehumidifier. For details of minimum available static pressure, *see section 9.3 Technical data.*

### 5.6.2. Process air inlet

The dehumidifier has an external filter box for the process air inlet.

If there is a risk of the process air filter icing up, a duct should be connected to retrieve process air from a dry location 5-10 meters from the door opening. The filter box can then be moved to the inlet side of the duct.

### 5.6.3. Dry air outlet duct

Channel out the dry air from the dehumidifier and distribute it so that it mixes with the warm, humid air that normally enters the cold store above the cold storage entrance doors that are opened regularly.

Control airflow and install an adjustable damper in the duct.

Regulate the airflow to be not more than the specified 1400m<sup>3</sup>/h.

Make sure that airspeed at the entrance is reaching the floor. This can be done by distributing the dry air evenly through a plenum with nozzles covering the width of the door

If the dry air does not reach the floor enough there is a risk of ice building up at the entrance

### 5.6.4. Reactivation air intake

Place the reactivation air intake and filter box outside the cold store.

Mount the filter box directly on the wall. The duct to the dehumidifier reactivation air intake should be at most 1.5 meters long and must be insulated with a minimum of 25mm foam insulation or similar performance to prevent ice build-up.

This also applies to the section of duct passing through the wall. An adjustable damper is installed in the duct to adjust airflow correctly. This is important to achieve correct performance and energy efficiency of the unit.

Place the inlet filter protected from rain and dust if positioned outdoors. Too close to the ground increases the risk of dust and dirt reaching the filter.



### 5.6.5. Ductwork for wet air outlet

The wet air duct must be made of corrosion-resistant material. It must be able to handle temperatures between -30°C and 90°C, be no more than 1.5 meters long, and be insulated to prevent ice formation.

It is important that this also applies to the part of the duct passing through the wall!

Because of its high moisture content, the wet air leaving the dehumidifier will condense on the inside of the duct walls.

Due to the low ambient temperature, there is a risk of ice formation.

The wet air duct must therefore be insulated with with minimum of 25mm foam insulation to similar performance to prevent ice build-up.

To prevent the outgoing wet air from humidifying the incoming reactivation air, the reactivation air intake must be positioned at least 2 meters from the wet air outlet and not right below the outlet to prevent water dripping into the filter.

1. Horizontal ducts must be installed with a slight decline (away from the dehumidifier) to drain away possible condensation.  
The decline must be at least 2 cm/m of duct.
2. 5 mm drain holes should be made at low points of the duct to prevent water accumulation in the duct.
3. To prevent the outgoing wet air from humidifying the incoming reactivation air, the wet air outlet must be placed at least 2 meters from the reactivation inlet.
4. It is important not to position the drain or wet air outlet right above the inlet filter and box risking water to drip down on the inlet filter box.
5. If the filter box is positioned outside, make sure it is well protected from dirt, rain, and snow.

#### NOTE

Always drill the drain holes on the outside of the cold storage/freezer room wall



#### WARNING

The wet air outlet is hot. To avoid burns from unintended contact, make sure it is insulated

## 5.7. Installation examples — cold storage room (freezer)

Munters recommends the following installations. If in doubt, contact Munters for advice.

Note the service space requirements in *section 9.1, Dimensions and service space*.

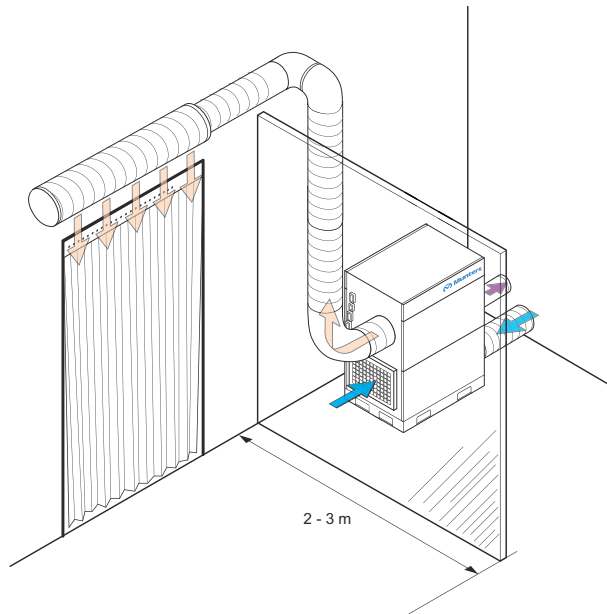


Figure 4.1 Position behind screen.

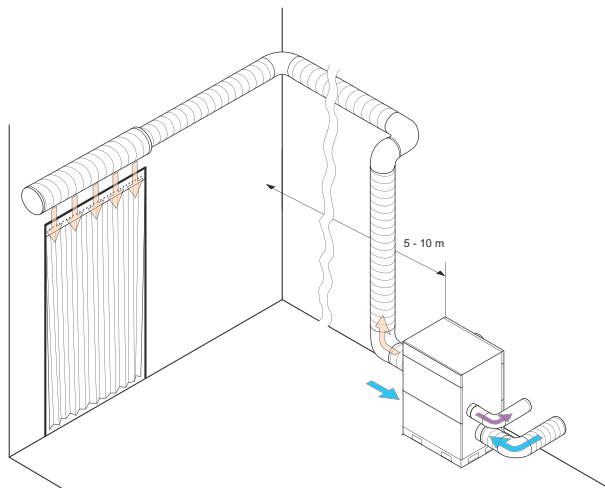


Figure 4.2 Position far away from door / airlock.

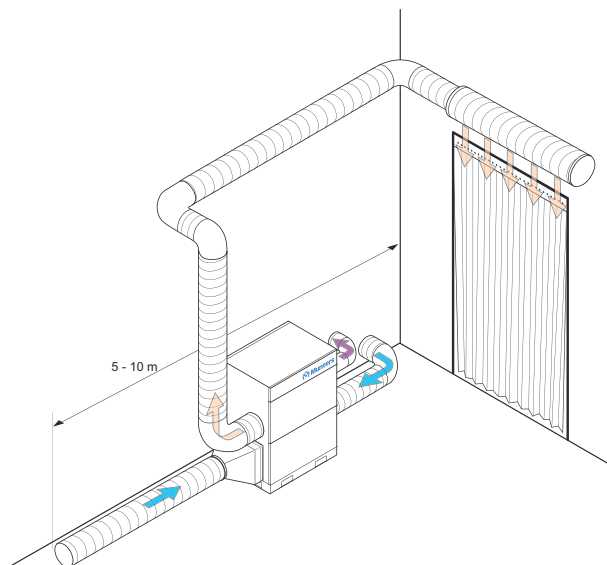


Figure 4.3 Position far away from door / airlock.

## 5.8. Electrical installation



### WARNING

All electrical installations must be done by an authorized electrician in accordance with local regulations. An incorrect installation can cause electrical shock hazards and damage to the unit.



### WARNING

The unit must never be connected to another voltage or frequency than what is specified on the identification plate. Too high line voltage can cause electrical shock hazards and damage to the unit.



### WARNING

The electrical wiring must be installed so that the protective conductor is completely enclosed within electrical equipment enclosures or otherwise protected throughout its length against mechanical damage.



### CAUTION

The supply voltage must not differ from the specified operating voltage by more than  $\pm 10\%$ .

The dehumidifier is delivered complete with all internal wiring installed and configured for the voltage and frequency specified on the identification plate.

The main power supply is connected directly to the main power switch in the unit. The supply cable and main fuses must be rated for the unit.

### NOTE

If the unit is connected to the power after an RCD (Residual Current Device), also known as an earth fault breaker, this must be of "industrial" **type B** typically with a sensitivity of 100 mA or greater to avoid any unwanted tripping.

Maximum permissible system impedance 0.01 Ohm.

For connection details, see the identification plate and the wiring diagram.

Preferably connect the unit with a flexible cable to a wall-mounted socket. This way the unit can easily be disconnected from the power supply by removing the plug from the socket.

## **5.9. Pre-start settings**

On delivery, the operational parameters are set for use in a cold store.

The application does not require the connection of external sensors or external input/output signals.

To change any running parameters, see the AirC400 v2 manual. Note that changing of any parameters can result in comprising the performance or damaging the dehumidifier if done wrongly

## 6. Commissioning



### WARNING

Commissioning and initial start-up of the unit must be done by authorized personnel only.



### WARNING

Rotating fan blades can cause serious injury. Only operate the unit with the air ducts connected.



### CAUTION

The airflows must never be set above the rated airflows without consulting Munters for verification.



### CAUTION

Incorrect adjustment of the airflows can cause malfunction of the unit. Any damage to the unit resulting from incorrect adjustment of the airflows can invalidate the warranty of the unit.

### 6.1. Inspection before first start

#### NOTE

Commissioning/Start-up inspection "S" by Munters is mandatory to validate the full warranty.

1. Make sure that the main power switch is set to position **O**.
2. Open the cover for the electrical panel and make sure that no circuit breakers or automatic fuses have released.
3. Examine the air intake filters and make sure that they are undamaged and correctly installed, and that all areas inside the different unit sections are clean.
4. Inspect so there is no ice built up inside the unit, electrical panel, and filters.

5. Examine all ducts and duct connections and make sure that all connections have been correctly installed, and that there are no signs of damage. Make sure that all ducts are free from unwanted material blocking the air passage or ice.
6. Make sure that the incoming power supply voltage is correct and that the cables are correctly connected.

## 6.2. Function test

1. Set the main power switch to position 1.
2. Start the unit.
3. Make sure that the rotor rotates in the direction indicated by the arrows. If the direction of rotation is wrong, interchange the connections for the incoming wires in the main power switch.



### NOTE

At startup, the Icedry1400 unit will have a sequence to defrost any ice that has built up in the reactivation sector before the rotor starts turning.

## 6.3. Airflow adjustment

To obtain optimal performance, the process and reactivation airflows must be correctly adjusted.

Contact Munters for help with installation and settings.

1. Adjust the dampers installed in the dry air outlet and reactivation air inlet ducts to the correct rated airflows.
2. Start the dehumidifier and run at full power for 8 minutes to allow the reactivation heater to reach its normal operating temperature.
3. Make sure that the temperature difference between the reactivation inlet air and the reactivation temperature is 95 °C (tolerance limit  $\pm 5$  °C).  
If the temperature difference lies outside of the 5% tolerance limit, the reactivation air damper can be adjusted in small steps until the reactivation temperature is within the specified tolerances. Allow the temperature to stabilize after each adjustment.  
**EXAMPLE:** Inlet air temperature 15°C and reactivation air temperature 110°C = temperature increase 95°C.
4. Set the unit in Auto mode (*see section 7.3.1*) and control the temperature at wet air outlet when stabilized so it does not go below zero degrees.

## 7. Operation

### 7.1. Main power switch



*Main power switch*

- When the main power switch is set to position **0**, the unit is not powered beyond the switch.
- When the main power switch is set to position **1**, the unit is powered and can be started.

### 7.2. Control system

For more information about the control system, parameters, and settings, see the control system supplement AirC400v2 controls manual.

### 7.3. Start and stop

Start and stop of the unit is controlled from the control system panel, or with the mode selector depending on configuration.



#### **CAUTION**

In order to dissipate any residual heat, the fans and the drive motor continue to run after the unit is switched off until the temperature falls below 50 °C. Do not turn off the main power before the fans have come to a complete stop.

### 7.3.1. Start/stop from control system panel



Press the start/stop button in the upper right corner to operate the unit.

The unit will automatically control on heater and wet air temperature. The heater will never turn completely off to prevent ice in wet air ducting.

- From Off, press once to go to Automatic mode.
- From Off or Automatic, press and hold for more than 3 seconds to go to Manual mode, 100% capacity dehumidification.
- From Automatic or Manual, press once to go to Off.

### 7.4. Quick stop

The mode selector is used to start and stop the unit in normal operations. In case of an emergency, use the main power switch on the dehumidifier see *section 7.1, Main power switch*.



#### CAUTION

Only quick stop the dehumidifier in case of an emergency. The fan stops and the heater can be very hot, which can result in damage to the heater and other components close to it.



#### CAUTION

Only quick stop the dehumidifier in case of an emergency. The fan stops and the heater can be very hot, which can result in damage to the heater and other components close to it.



## 8. Service and maintenance

### 8.1. Safety



#### **WARNING**

The unit can restart automatically after a power cut. Make sure that the main power switch is set and locked in the OFF position before any service or maintenance work starts.



#### **WARNING**

Rotating fan blades can cause serious injury. Only operate the unit with the air ducts connected.

### 8.2. General

Service and maintenance interval lengths are primarily determined by operating conditions and the environment in which the unit is installed. For example, if the process air contains a lot of dust, preventative maintenance should be carried out at shorter intervals. The same also applies if the unit works intensively.

The control system is equipped with a service indicator. It is programmed at commissioning to give a service alarm after an estimated number of operating hours, or on the preset date for the next service.

Munters offers a comprehensive range of services, from commissioning and start-up to advanced maintenance packages. More information can be obtained from the local Munters representative.

### 8.3. Extended warranty

Munters offers an extended warranty to the standard terms when the Customer signs a service agreement with Munters. Details are available on request.

## 8.4. Service alternatives

In addition to commissioning (**S**) of the unit there are five service alternatives (**A - E**).

**A** - Inspection and change of filters. General operation inspection.

**B** - In addition to A, additional inspections and measurements.

**C** - In addition to B, preventive replacement of safety components after 3 years / 24000 hours of operation.

**D** - In addition to C, preventive replacement of rotatable parts after 6 years / 48000 hours of operation.

**E** - In addition to C, preventive replacement of electrical components after 9 years / 72000 hours of operation.

Alternative A is done at every service occasion, and the other alternatives are added at the intervals according to the schedule.

### NOTE

It is recommended to contact Munters for service or repair. Operating faults can occur if the unit is maintained insufficiently or incorrectly.

### NOTE

Commissioning/Start-up inspection "S" by Munters is mandatory to validate the full warranty.

## 8.5. Maintenance schedule



### NOTE

Service work should be performed at each interval of operating hours or calendar time, whichever is reached first.

Service alternative	S	A	B	C	D	E
Operating time [hours]	0	4000	8000	24000	48000	72000
Calendar time [years]	0	0.5	1	3	6	9
Inspection of filter, replace if necessary	X	X				
Operation inspection	X	X				
Mechanical inspection	X		X			
Inspection of rotor, seals and flexible connections	X		X			
Electrical inspection	X		X			
Inspection of controls, sensors, settings, safety and interlock	X		X			
Capacity and flow balance measurement	X		X			
Maintenance Safety kit				X		
Maintenance Rotating parts kit					X	
Maintenance Electrical parts kit						X

## 8.6. Cleaning

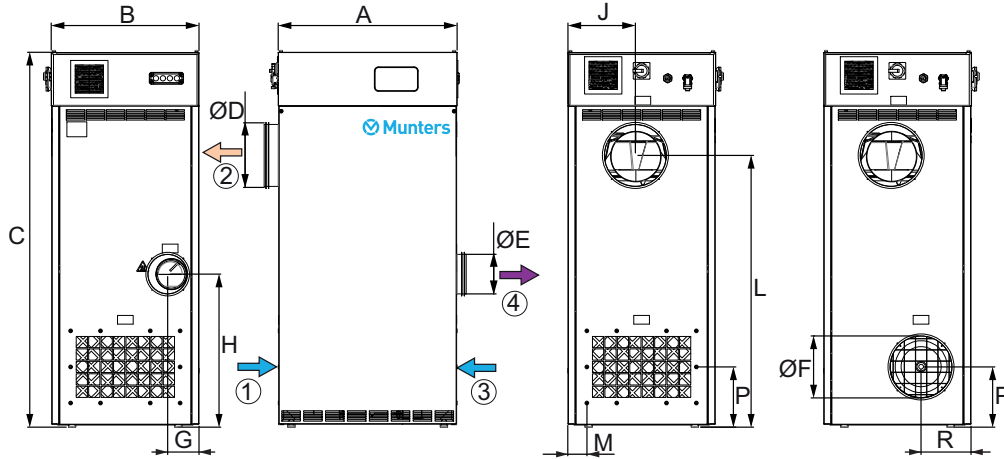
Use only a pH-neutral soapy water solution and a soft sponge for cleaning of the unit casing.

When cleaning the inside, avoid contact with the rotor and wipe the surfaces dry.

Use a vacuum cleaner with a brush head for the rotor. Contact Munters for instructions if vacuum cleaning is not sufficient.

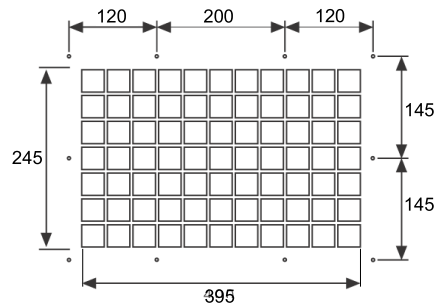
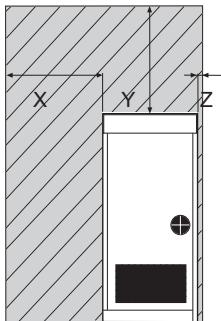
## 9. Technical specification

### 9.1. Dimensions and service space



#### Dimensions

1. Process air
2. Dry air
3. Reactivation air
4. Wet air



Minimum required service space and screw pattern for duct connection

X=700 mm, Y=500 mm, Z=100 mm

Model	Dimensions (mm)																	Weight (kg)
	A	B	C	ØD	ØE	ØR	F	G	H	J	L	M	N	P	X <sup>(1)</sup>	Y <sup>(1)</sup>	Z <sup>(1)</sup>	
IceDry1400	720	595	1405	200	125	250	272	242	751	112	235	380	40	295	700	500	100	146

(1) Space for service.

## 9.2. Capacity diagrams

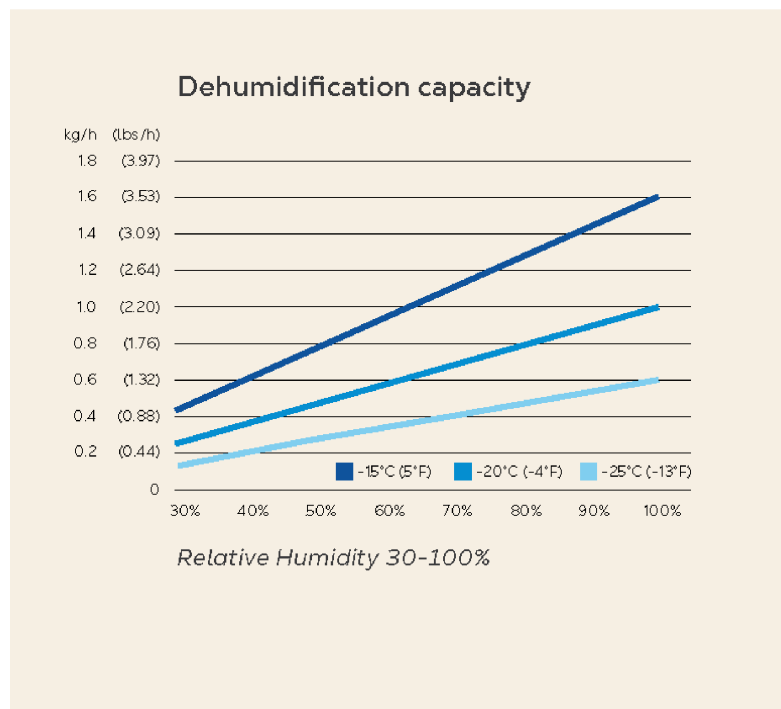
Approximate capacity in kg/h. Contact Munters for more detailed information.



### NOTE

The below figures are based on rated airflow.

1. Process air temperature (°C)
2. Process air relative humidity (% RH)
3. Dehumidification capacity (moisture removal per hour) (kg/h)

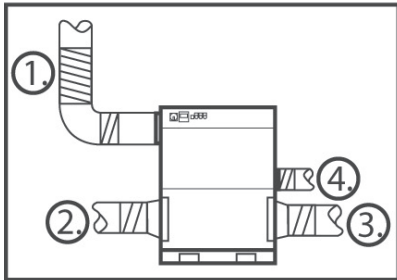


### 9.3. Technical data

Model	IceDry 1400
<b>Process air<sup>1</sup></b>	
Rated airflow (m <sup>3</sup> /h)	1400
Min available static pressure (Pa) <sup>2</sup>	300
Fan motor power (kW) at 50 Hz <sup>3</sup>	1.1
Fan motor power (kW) at 60 Hz <sup>3</sup>	1.32
<b>Reactivation air<sup>1</sup></b>	
Rated airflow (m <sup>3</sup> /h)	254
Available static pressure (Pa) <sup>2</sup>	100
Fan motor power (kW) at 50 Hz <sup>3</sup>	0.24
Fan motor power (kW) at 60 Hz <sup>3</sup>	0.29
<b>Rated current (amps/phase)</b>	
380 V	14.1A
400 V	13.5A
415 V	13.1A
440 V	12.7A
460V	12.3
<b>Reactivation heater</b>	
Temp. increase across heater (°C)	95
Reactivation heater power (kW)	6.3
<b>Miscellaneous data</b>	
Filters (standard)	Coarse 65% (G4)
IEC protection class (unit)	IP33
IEC protection class (electrical panel)	IP44
Fan motor winding insulation class	Class F
Drive motor winding insulation class	Class F
High temperature cut-out (°C)	160 ± 5
Contact coil voltage (V AC)	24
External (potential-free) output contacts <sup>4</sup>	2 A, 230 V AC (max.)
Corrosion class, outside casing	C4 (painted)
Corrosion class, inside casing	C3 (unpainted)
Weight (kg)	14
<b>Environmental conditions</b>	
Operating temperature (°C)	-25... +40
Maximum installation altitude, above sea level (m)	2000
Transport and storage temperature (°C)	-20... +70
<sup>1</sup> Figures quoted are based on fan inlet temperature of 20°C, and an air density of 1,2 kg/m <sup>3</sup> .	
<sup>2</sup> Contacts used to give an external indication (output).	

## 9.4. Sound data

### 9.4.1. Definition



Duct connections

1. Ductwork for dry air
2. Ductwork for process air
3. Ductwork for reactivation air
4. Ductwork for wet air

### Values

$L_p(A)$  = Sound pressure (free field, Directivity factor  $Q=2$ ,  $d=1$  distance from source in meter)

$$L_p(A) = L_w(A) + 10\text{Log}(Q/(4\pi d^2))$$

$L_w(A)$  = Sound power level dB (A-weighted)

### Values

$L_{wt}$  = Total noise level dB (rel. 10-12W)

$L_w$  = Noise power level in octave band dB (rel. 10-12W)

$K_{ok}$  = Correction for calculating  $L_w$  ( $L_w = L_{wt} + K_{ok}$ )

$dB(A)$  = Rated noise level at 100m<sup>2</sup> room absorption

### 9.4.2. Sound data IceDry1400

Table 1. Sound in ducts

Noise	dB(A)	Lwt	Correction Kok dB at ISO-band centre frequency, Hz							
			63	125	250	500	1000	2000	4000	8000
Duct 1	Na	101	-10	-2	-2	-13	-20	-22	-27	-33
Duct 2	Na	102	-3	-5	-5	-20	-20	-19	-21	-26
Duct 3	Na	94	-5	-6	-5	-17	20	-21	-23	-27
Duct 4	Na	88	-2	-6	-12	-25	-31	-31	-33	-35
Room	64	90	-1	-8	-14	-16	-20	-23	-26	-31

## 10. Disposal

The unit and consumables must be disposed of in accordance with applicable legal requirements and regulations. Contact your local authorities.

If the rotor or filters have been exposed to chemicals that are dangerous to the environment the risk must be assessed. The chemicals can accumulate in the material. Take the necessary precautions to comply with applicable local legal requirements and regulations.

The rotor material is not combustible, and should be deposited like fiberglass materials.



### **WARNING**

If the rotor is to be cut in pieces, wear a suitable CE marked face mask selected and fitted in accordance with the applicable safety standards to protect from the dust.



## 11. Contact Munters

Find your nearest Munters office at [www.munters.com](http://www.munters.com).

Click [here](#) or scan below to find your local Munters Service Team.



