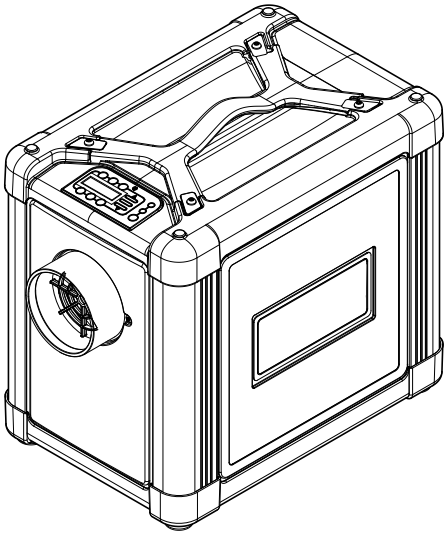
Munters
Your Perfect Climate

ENGLISH



# ComDry M190Y Dehumidifier

User manual from serial no. 20001

T-M190Y-A1808

Original instructions

Read these instructions before using the dehumidifier.

# Table of Contents

# 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 period is valid from the date the unit left our factory, unless otherwise stated in writing. 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.

It is a condition of the warranty that the unit for the full warranty period is serviced and maintained as described in section *Service and maintenance*. 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. Conformity with Directives

The dehumidifier is in conformity with the essential safety requirements of the Machinery Directive 2006/42/EC, the RoHS Directive 2011/65/EU and the EMC Directive 2014/30/EU.

The dehumidifier is manufactured by an organization certified according to ISO 9001 and ISO 14001.

## 1.5. 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.

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

**NOTE**
When a dehumidifier is placed in a building with radon it is necessary to contact an expert to secure the best overall solution. All changes affecting the ventilation or the pressure balance in the building can result in a changed concentration of radon.

## 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:

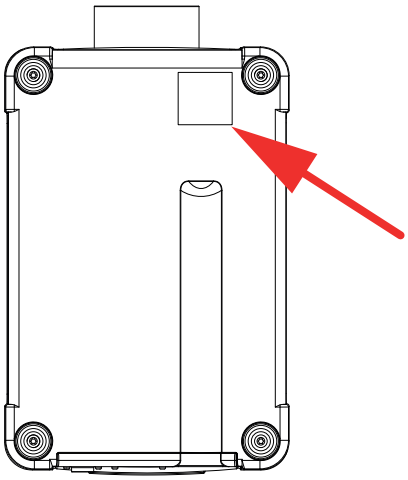
- The safety of all persons concerned.
- The safety of the unit and other property.
- The protection of the environment.

**WARNING**

- The unit must not be splashed with or immersed in water.
- 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 be connected to an earthed electrical outlet.
- 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.
- The unit can restart automatically without warning following a power cut.
- Do not operate the unit if the power cable or plug is damaged, risk of electrical shock.
- Do not pull the plug with wet hands, risk of electrical shock.
- Do not insert fingers or any objects into the air vents, rotating fans are inside.
- Do not cover the unit as that can block air intake or outlet and cause a fire.
- If the unit has overturned, cut the power immediately.
- Disconnect the mains plug from the socket before starting any maintenance work.
- 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

The identification label is placed on the bottom side of the dehumidifier.



# 3. Function overview

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

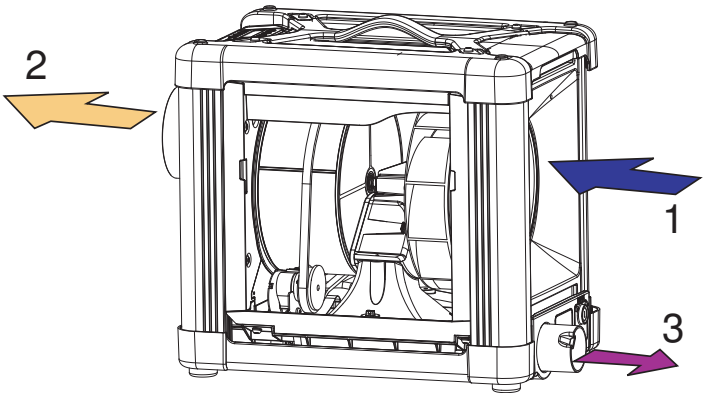
The desiccant rotor is made of a composite material that is highly effective in attracting and retaining water vapour. The rotor is divided in two zones.

ComDry M190Y uses the same inlet airflow for process air and for reactivation of the rotor.

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.




Airflows

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

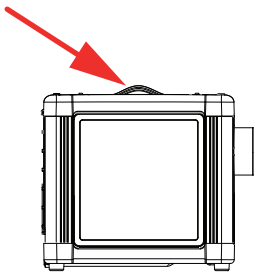
# 4. Transport, delivery inspection and storage

## 4.1. Transport

Transport the dehumidifier by carrying it by its handle or in the original packaging.

The unit must always be placed in an upright position during transport. Failure to comply with this can cause the unit to malfunction.

The power cable should be rolled up and placed under the handle.



Rolled up power cable

## 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

**CAUTION**
Always unplug the unit from the power supply when not in use.

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

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

# 5. Installation

## 5.1. 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.

The unit must be connected to an earthed electrical outlet.

Do not operate the unit if the power cable or plug is damaged, risk of electrical shock.

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

**NOTE**
When a dehumidifier is placed in a building with radon it is necessary to contact an expert to secure the best overall solution. All changes affecting the ventilation or the pressure balance in the building can result in a changed concentration of radon.

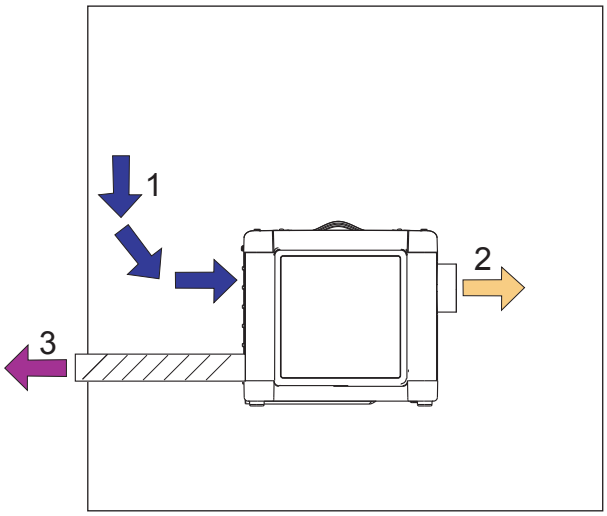
## 5.2. Closed system

A closed system is preferable when there is a need for dehumidification to a very dry climate. It is more economical to run compared to an open system.

The dehumidifier is placed in the space to be dehumidified.

To ensure that the dry air is distributed evenly in the space to be dehumidified a ducting can be connected to the dry air outlet of the dehumidifier.

The process/reactivation air is taken from the space to be dehumidified. The wet air is transported outdoors through ducting.




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

## 5.3. Open system

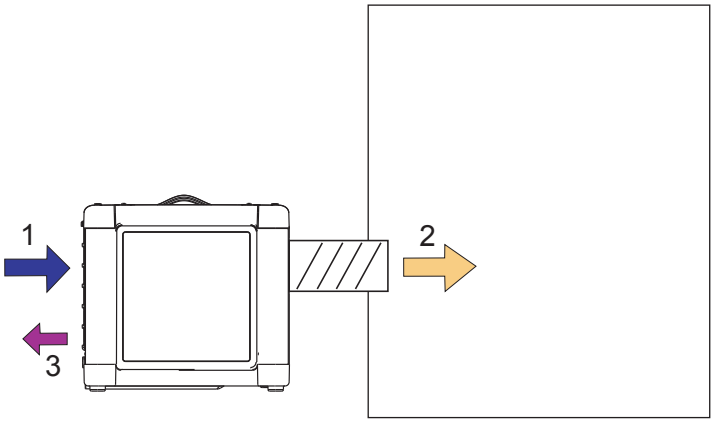
The dehumidifier is placed outside the space to be dehumidified.

The installation is used to solve the following problems:

- When moisture damaged objects are to be dehumidified.
- Dust or corrosion causing particles are present in a space where dry air will be supplied.
- To prevent moisture from entering the dehumidified space/object.

Dry air is transported with ducting to the space to be dehumidified.

The wet air is discharged in the vicinity of the unit or moved outdoors.




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

## 5.4. Site requirements

The dehumidifier is only intended for indoor installation.

Avoid installing the dehumidifier in a damp environment where there is a risk of water entering the unit or in a very dusty environment. If in doubt, contact Munters.

**NOTE**
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 trouble-free operation.

For space requirements, see section *Dimensions and service space*.

If the dehumidifier is to be placed on the wall we recommend the specially designed wall bracket.

Always leave minimum 10 cm space between the unit and the wall.

## 5.5. Ducts and hoses

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

- Duct length must be kept as short as possible to minimize static pressure loss.
- All duct and hose connections must be air tight and vapour tight to ensure full performance.
- The ducting must always be insulated when there is a risk of freezing.
- The total resistance in the ductwork must not exceed the performance rating of the dehumidifier fans.

**NOTE**
Maximum length of dry air hose is 25 m.

### 5.5.1. Ductwork for outdoor air inlet

When bringing outside ambient air into the dehumidifier, the opening to the inlet duct should be located sufficiently high above ground level to prevent the pick up of dust and debris. The ducting should be designed to prevent rain and snow from being drawn into the dehumidifier. The air inlet must be located away from possible contaminants such as engine exhaust gases, steam and harmful vapours.

To prevent the wet air from humidifying the process/reactivation air, the air inlet for process/reactivation must be located at least 2 m from the wet air outlet.

Fasten wire netting with a mesh width of approximately 10 mm in the outer end of the duct.

### 5.5.2. Ductwork for wet air outlet

Wet air ducting must be in corrosion resistant material, and must be capable of withstanding temperatures up to 80 °C.

The wet air ducting must always be insulated if there is a risk of freezing. The wet air leaving the dehumidifier will easily cause condensation on the inside of the duct walls due to the high moisture content.

**NOTE**
Horizontal ducts must be installed with a slight decline away from the dehumidifier to drain possible condensation. The decline must be at least 2 cm/m of duct. Drainage holes (5 mm) should be made at low points of the duct to prevent water accumulation.

Fasten wire netting with a mesh width of approximately 10 mm in the outer end of the duct.

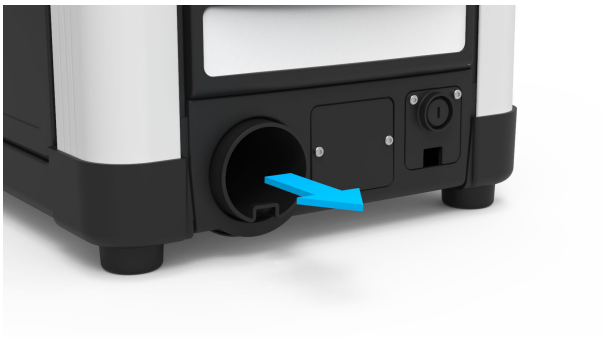
Wet air hoses are usually guided outdoors. In large premises where the dehumidifier is outside of the space to be dehumidified, the wet air must be ducted away from the unit with a hose of minimum length 2 metres. Make sure that the wet air is not sucked back into the unit and that the wet air does not blow against moisture sensitive objects.

### 5.5.3. Connecting the wet air hose

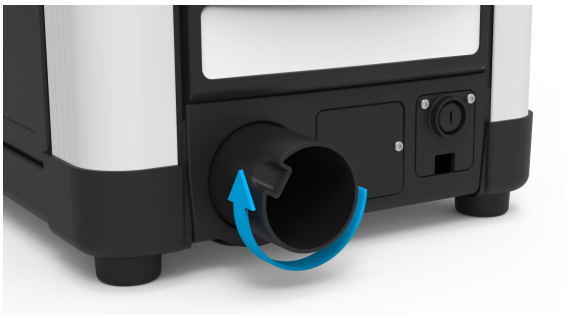
The wet air outlet is hidden for transportation purposes.

The outlet diameter is 50 mm.

1. Pull out the outlet.



2. Turn the outlet clockwise to lock it in position.



3. Connect the hose.

**NOTE**
Maximum length of the wet air hose is 6 metres.

## 5.6. Electrical connections

The dehumidifier is delivered with a 2.7 m long power cable, with a plug for connection to an earthed outlet.

**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.

The unit must be connected to an earthed electrical outlet.

Do not operate the unit if the power cable or plug is damaged, risk of electrical shock.

**CAUTION**

In case of a fixed installation where the plug is replaced by a circuit breaker, make sure that the fuse rating in the circuit breaker is correct.

The mains frequency can be adjusted, see the control system supplement.

## 5.7. Expanding the system

**CAUTION**

Never connect ComDry directly to a standard Ethernet network, even if the connector type is the same (RJ45-8, modular connector). Doing so can damage both the ComDry control system and/or the computer network.

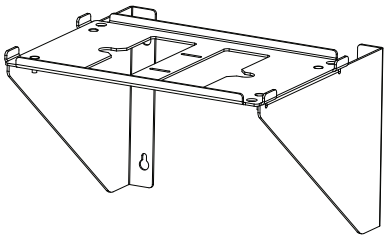
All ComDry dehumidifiers are equipped with two CAN bus ports, located behind a cover next to the power inlet. An indoor remote control, external humidity/temperature sensors or an external signal box can be connected to these CAN bus ports.

Any of the above devices can be connected to either port. When no port is used the two empty termination plugs must be fitted to the ports.

Remove the cover. CAN bus ports with empty termination plugs.

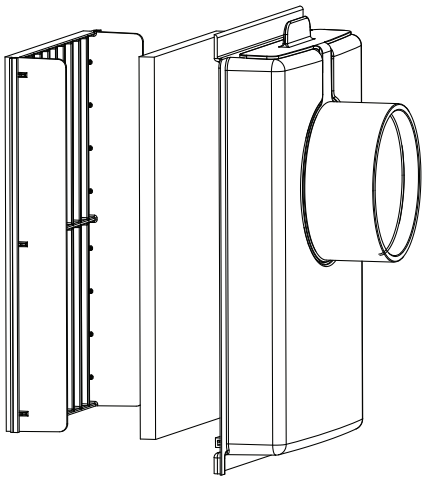
## 5.8. Accessories

**Wall bracket**



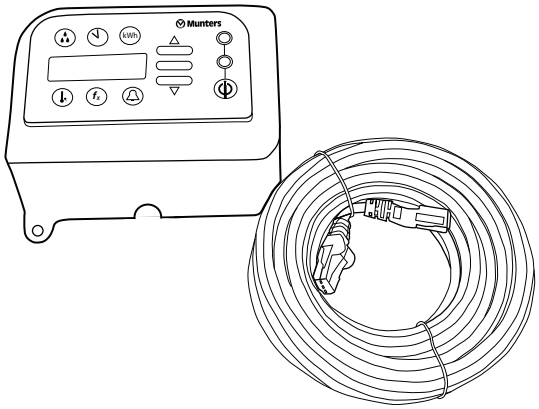
For mounting the unit on a wall.

**Stub pipe kit**



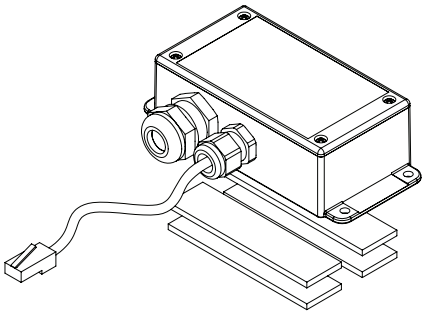
Used when there is a need to connect an inlet duct or hose to the dehumidifier.

### Remote control



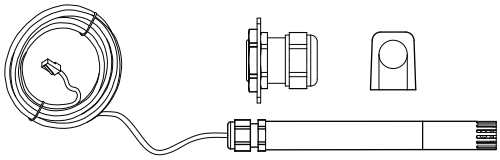
Makes it possible to control the unit from a distance, delivered with a 10 m cable.

### External signal box



Used when there is a need to connect to an external control system.

### Remote RH/T sensor



For external measuring of humidity and temperature.

### Munters Connected Climate


Data logging and control

# 6. Operation

## 6.1. Safety

**WARNING**
The unit must not be splashed with or immersed in water.

The unit can restart automatically without warning following a power cut.

Do not operate the unit if the power cable or plug is damaged, risk of electrical shock.

Do not pull the plug with wet hands, risk of electrical shock.

Do not insert fingers or any objects into the air vents, rotating fans are inside.

Do not cover the unit as that can block air intake or outlet and cause a fire.

If the unit has overturned, cut the power immediately.

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

## 6.2. Quick stop

**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.

In case of emergency, stop the dehumidifier by pulling the mains plug or, if it is permanently connected to mains, by using the external circuit breaker.

## 6.3. Humidity control

The ComDry dehumidifier is equipped with a sophisticated microprocessor based control system. This, in combination with the built-in humidity/temperature sensor in the process air inlet, makes it possible to set both the control and presentation of the humidity to either relative humidity (RH%), dew point (Dp °C) or absolute humidity (X gr/kg).

The control system additionally checks the temperatures before and after the heater, as well as in the wet air after the rotor.

A high safety level is obtained by various temperature sensors. Too high temperatures gives a reduction of the heater power, while excessive temperatures will make the system issue an alarm and shut the dehumidifier down in a controlled way. For further explanation, see the ComDry Control System Supplement or Quick Guide.

**NOTE**

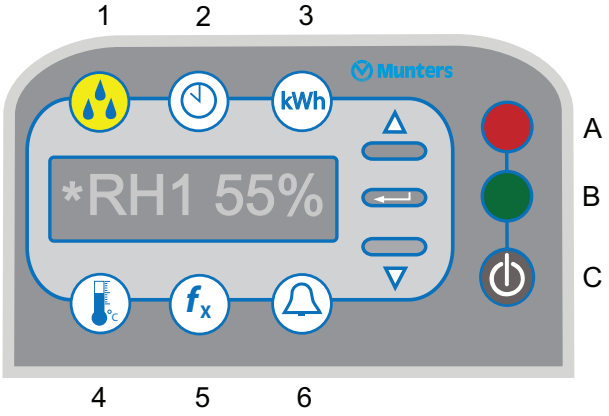
The dehumidifier always operates in automatic mode (moisture based operation). As default it will use the built-in humidity/temperature sensor, as option an external sensor.

## 6.4. Process fan modes

There are three process fan modes:

| Fan mode | Description |
|---|---|
| Fan ON | The dehumidifier will run the process fan continuously, regardless of if there is a dehumidification need or not. This is the default mode. |
| Fan INT | INTermittent mode. The fan will stop when the desired humidity (Set Value minus Hysteresis) is reached. If the humidity reading stays below the Set Value, the process fan will anyhow start after 30 minutes to let the built-in sensor more accurately sense the condition of the incoming process air. The fan will run for a minute to produce a proper measurement. If the humidity is still below the Set Value, the fan will stop again. This is repeated until the humidity reaches the Set Value, which will make the dehumidification start again. |
| Fan DEM | DEMand mode. The fan will stop when the desired humidity (Set Value minus Hysteresis) is reached. It will start again when the sensed humidity is equal to, or greater than the Set Value. This gives in practice a control with greater hysteresis than “Fan INT”, depending on the following: When the dehumidifier has reached the desired humidity level, it will shift to stand-by and stop the process fan. After a while, internal machine heat will increase the temperature of the humidity sensor. This makes the sensor reading even lower, i.e. the system functions as if there was a “negative hysteresis”. As a result, a greater humidity load will be necessary to make the dehumidifier start compared with the “Fan INT” mode. |

## 6.5. Control panel overview




| | | | | | |
|---|---|---|---|---|---|
| 1. | Humidity menu | 4. | Temperature menu | A. | Alarm indicator |
| 2. | Time menu | 5. | Functions menu | B. | Operation indicator |
| 3. | Power menu | 6. | Alarm menu | C. | On/Off button |

| Menu button | Function |
|---|---|
|  | Up/Right button |
|  | Enter/Confirmation button |
|  | Down/Left button |

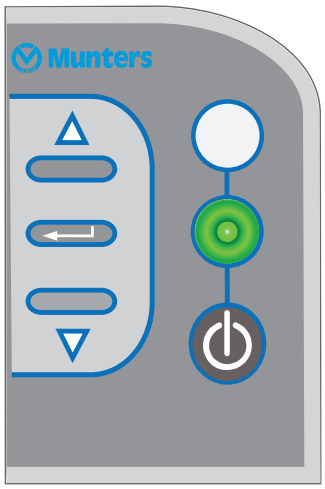
**NOTE**
For more information about the control system and the operation of the dehumidifier, see the ComDry Control System Supplement or Quick Guide.

## 6.6. Start the dehumidifier

Connect the dehumidifier to mains.

The control system will initiate by flashing all LEDs for a few seconds, and the display first shows the ComDry machine type, then the set frequency, and finally the software version number and the current humidity level

**NOTE**
The boot sequence takes about 10 seconds. Let the control system finish the booting before attempting to start the dehumidifier.




Press the On/Off button (C) once to start the dehumidifier.

If the measured humidity is lower than the Set Value, the green operating indicator (B) will start to flash in a long on/short off sequence. Depending on fan mode setting, the process fan will run or not. The unit is now in stand-by mode.

The dehumidifier starts to dehumidify when the measured humidity is equal to or greater than the Set Value, and the operating indicator (B) will shift to continuously lit.

## 6.7. Stop the dehumidifier

**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.

Press On/Off once to stop the dehumidifier.

The green operating indicator starts flashing with equally long and short on and off periods.

The unit continues to run for a while in order to cool down and then stops.

## 6.8. Automatic start after power failure

The dehumidifier will revert to operation after a power failure if it is set to ON, regardless of if it was running or in stand-by.

# 7. Maintenance

## 7.1. General

**WARNING**
Disconnect the mains plug from the socket before starting any maintenance work.

The dehumidifier is designed for continuous use over a long period of time with a minimal amount of supervision. The service interval depends mainly on the operational conditions and working environment.

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

**Munters Service** can offer a service plan adapted to suit the conditions of a specific installation. See contact details at the back of this manual.

## 7.2. Maintenance schedule

The schedule contains inspection and maintenance procedures as well as the recommended intervals for units used under normal operating and environmental conditions.

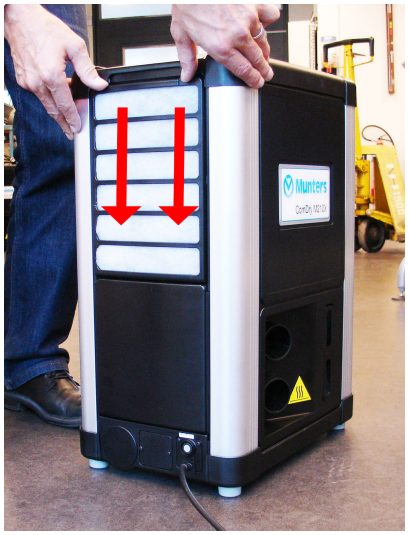
If the process air contains a lot of dust, preventive maintenance should be performed at shorter intervals than those specified below.

| Component | Inspection/maintenance | |
|---|---|---|
| | 4000 hours/6 months | 8000 hours/12 months |
| Filter* | Clean the filter housing and replace the filter if necessary. | Clean the filter housing and replace the filter. |
| Unit casing | Inspect for physical damage and clean the outside of the unit as necessary. | Check for physical damage and clean the outside of the unit as necessary. Check any line connections to ensure they are properly attached and that there is no air leakage. |
| Humidity sensor | No corrective action or test. | Test the sensor function and replace as necessary. |
| Functionality and performance test | No corrective action or test. | Perform a complete functionality and performance test, and replace worn parts as necessary. |

*Process filter

# 7.3. Filter change

## Process air

| | | |
|---|---|---|
| 1. | Push the filter frame down. |  |
| 2. | Pull the filter frame out and remove it from the unit. |  |
| 3. | Remove the old filter. |  |
| 4. | Replace it with a new filter and install the frame. | |

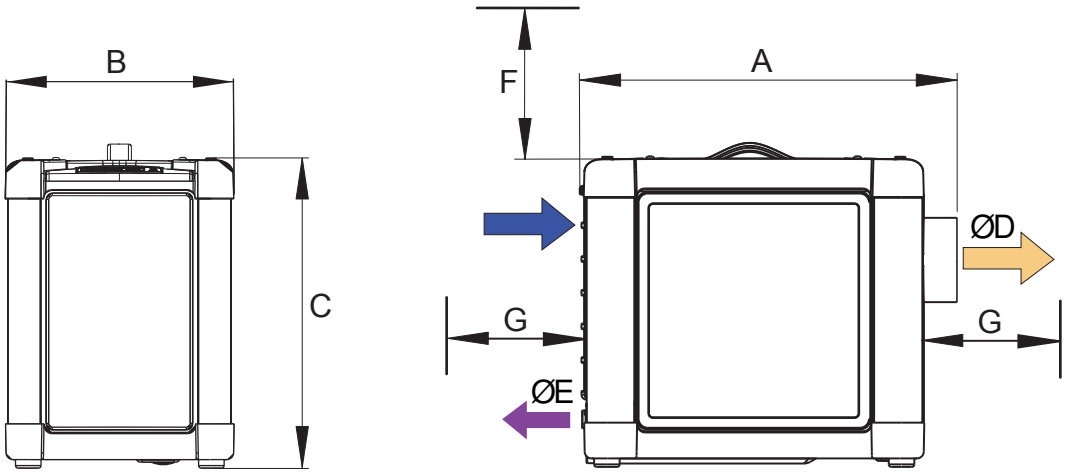
# 8. Fault tracing

| Symptom | Indication/Alarm message | Possible cause | Action |
|---|---|---|---|
| Unit has stopped | No display text | Power supply fault. | Check power supply to the unit. |
| | | Blown fuse | Replace the fuse. For correct type and rating, see label above power supply connection to the unit. |
| | Green LED is flashing: long on, short off sequence | There is no need for dehumidification. Measured humidity is below the set point (mode Fan "DEM" or "INT"). | None. The unit is in stand-by. It will start when the measured humidity reaches the Set Value. |
| | Alarm message: [SENSOR FAILURE] | Broken sensor | Contact Munters. |
| | Alarm message: [HEATER FAILURE] or [HIGH Ri TEMP] or [HIGH Rt TEMP] | - Over temperature protection fuse has tripped<br><br>- Blocked filter, hose or duct<br><br>- Blocked impeller | Wait until the unit has stopped. Then disconnect the power supply. Check that the filters, hoses or ducts are not clogged.<br><br>To reset the over temperature protection fuse, the unit must be disconnected from the mains and allowed to cool down.<br><br>If the alarm is reissued after the unit has cooled down and the alarm has been reset, contact Munters. |
| | Alarm message: [HIGH Wt TEMP] | Set Value RH is too low in dry environment | Check if low Set Value RH is necessary. Adjust to higher value. |
| | | Rotor drive mechanism fault | Check rotor drive belt and drive motor.<br><br>Check through the dry air outlet that the rotor rotates at approximately ten revolutions per hour. If rotor does not rotate, contact Munters. |
| | Alarm message: [MAINS VOLTAGE LOW] | Unit is connected to the wrong voltage, or problem with the supply. | Check mains supply. |
| | Alarm message: [LONG STOP TIME] | Broken fan. Heater is on | Contact Munters. |
| Indication | Alarm message: [TIME FOR SERVICE] | | See the ComDry Control system supplement. |
| | Alarm message: [NO COM] | CAN busempty plugs or external connection missing. | Reinstall plugs or connection cable. If alarm remains, contact Munters. |
| Loss of performance | The dehumidifier is running but is not controlling the humidity. | Low reactivation temperature | Check that the humidity Set Value is lower than the measured humidity. |
| | | Low reactivation airflow | Check the filter and any hoses or ducts for leakage or blockage. The use of a restricting flange in combination with wall pipes can cause too little reactivation air flow. |

# 9. Technical specification

## 9.1. Dimensions and service space

Dimensions in mm

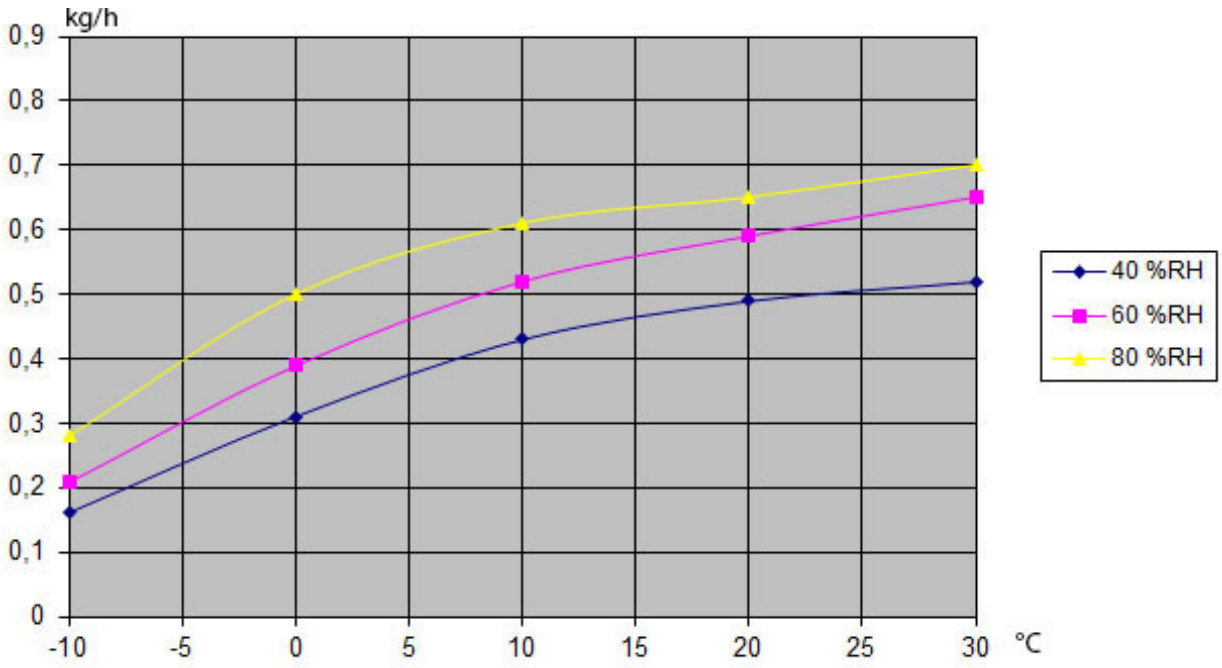



| A | B | C | ØD | ØE | F | G | Weight |
|---|---|---|---|---|---|---|---|
| 445 | 270 | 365 | 100 | 50 | 350 | 500 | 11.5 kg |

## 9.2. Capacity diagram

The diagram shows approximate process air dehumidification capacity as a function of the process air temperature for three different air humidity conditions.

For detailed information, contact your nearest Munters office.

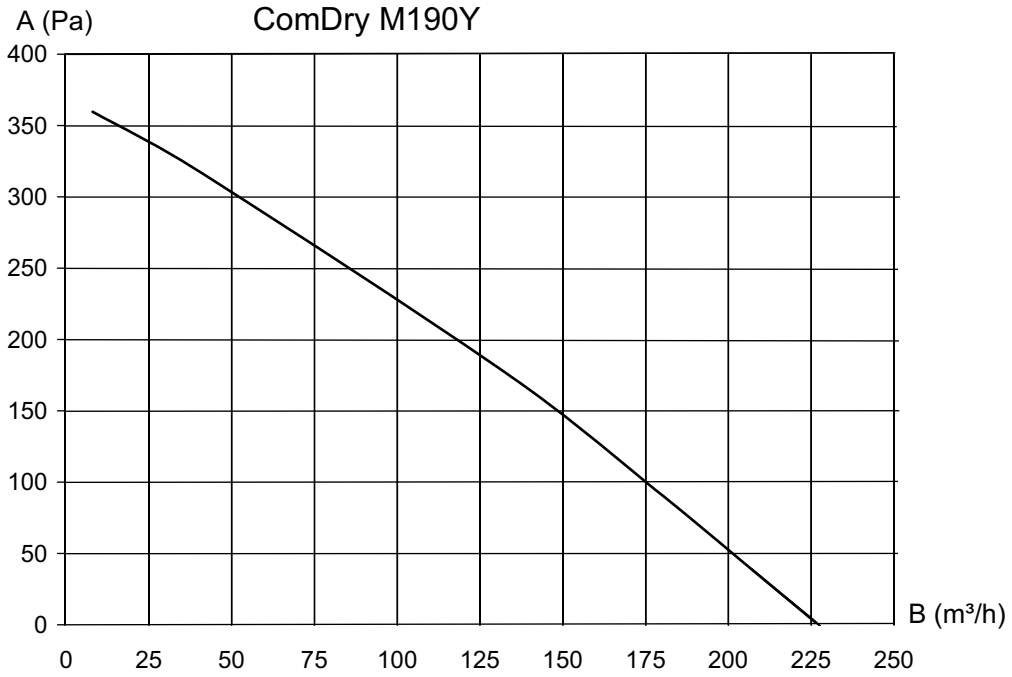



X-axis = Temperature, process air (°C)

Y-axis = Dehumidification capacity (kg/h)

## 9.3. Fan curve

**Process air**




Density 1,2 kg/$m^3$

A. Static pressure (Pa)

B. Airflow ($m^3$/hour

# 9.4. Technical data

| | | |
|---|---|---|
| **Process air** [1] | | |
| Free-blowing air 50/60 Hz (m³/h) | 225 | |
| Rated airflow at 60 Pa (m³/h) | 190 | |
| Max. static pressure 50/60 Hz (Pa) | 300 | |
| Fan motor power (kW) | 0,09 | |
| **Reactivation air** [1] | | |
| Rated airflow at 90 Pa (m³/h) | 30 | |
| Max. static pressure (Pa) | 260 | |
| Fan motor power (kW) | -[2] | |
| **Reactivation air heater** | | |
| Heater power (kW) | 0,84 | |
| Factory set reactivation temperature (Rt) limit (°C) | 130 | |
| Factory set wet air temperature (Wt) limit (°C) | 75 | |
| Temperature increase across heater (°C) | 100 | |
| **Other** | | |
| Sound pressure level, free blowing process fan (dBA) | 58 | |
| IEC protection class (unit) | IP33 | |
| IEC protection class (electrical panel) | IP54 | |
| Fan motor winding insulation class | Class B | |
| Drive motor winding insulation class | Class B | |
| Rotor type | HPS | |
| **Environmental conditions** | | |
| Operating temperature (°C) | -20... +40 | |
| Maximum installation altitude, above sea level (m) | 2000 | |
| Transport and storage temperature (°C) | -20... +70 | |
| **Total power, voltage and current** | | |
| Voltage (V) | 115 | 230 |
| Frequency (Hz) | 50/60 | 50/60 |
| Total power (W) | 950 | 950 |
| Current (A) | 8,2 | 4,1 |
| Fuse | 3 AG, 250 VAC, 10 A Slow | 3 AG, 250 VAC, 6 A Slow |

[1] The specified performance is based on 20 °C and air density of 1.2 kg/m³.

[2] The same fan is used for process air and reactivation air.

# 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

| | | | |
|---|---|---|---|
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