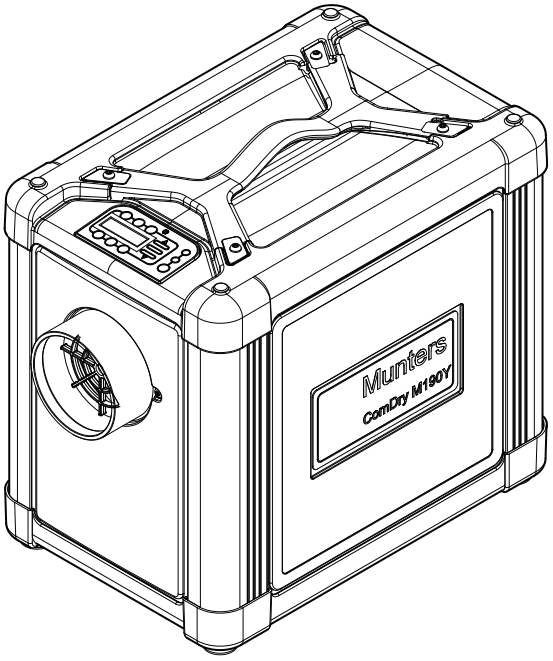
Original instructions

User manual

ComDry M190Y



Desiccant dehumidifier

190TEN-1082-E1404

Munters

Important user information

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. Attachment or installation of additional devices is only allowed after written agreement by Munters.

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 fabrication number. This information is stamped on the identification plate, see section *Marking*.

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.

Safety

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.*

Conformity with Directives

The dehumidifier is in conformity with the essential safety requirements of the Machinery Directive 2006/42/EC, the Low Voltage Directive 2006/95/EC, the RoHS Directive 2011/65/EC and the EMC Directive 2004/108/EC. The dehumidifier is manufactured by an ISO 9001:2008 accredited manufacturing organisation.

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Please send any comments regarding this manual to:

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1 Introduction

1.1 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 regarding the installation or the use of your dehumidifier.

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

1.2 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.

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.*

CAUTION!

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

1.3 Safety

Every measure has been taken in the design and manufacture of the dehumidifier to ensure that it meets the safety requirements of the directives and standards listed in the EC Declaration of Conformity.

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.

The types of dangers that are indicated in this manual are described in section *Important user information*.

WARNING!

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

- All electrical installations must be carried out by a qualified electrician and in accordance with local regulations.

- The unit must be connected to an earthed electrical outlet.

- Do not connect the unit to other mains voltage than specified on the identification plate.

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

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

- Do not insert fingers or any other 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.

- Always contact Munters for service or repair.

1.4 Marking

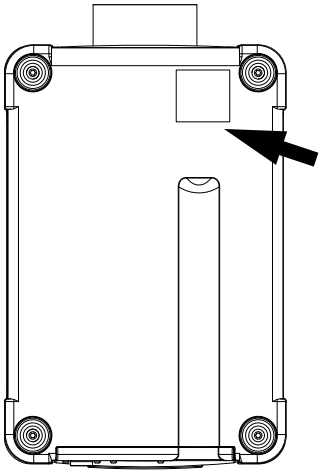


Figure 1.1 Identification plate position

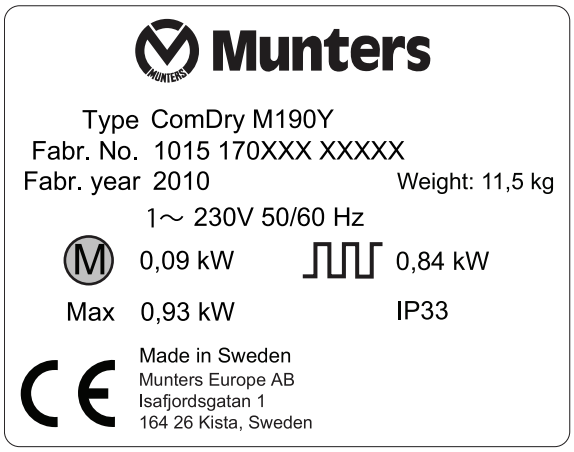


Figure 1.2 Identification plate, an example

Explanation of "Fabr. No." on the identification plate:

10: Year of manufacture

15: Week of manufacture

170XXX: Article number

XXXXX: Serial number

2 Principle of operation

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. 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 that is 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.

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

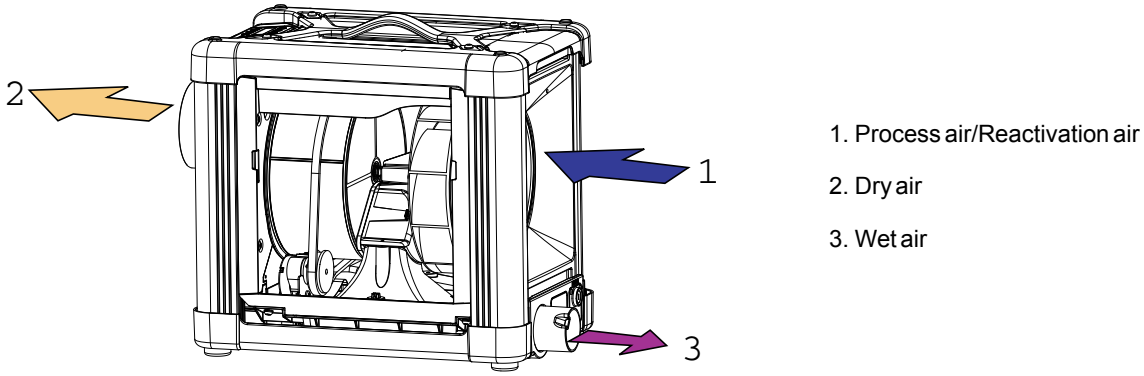


Figure 2.1 Principle of operation

3 Transport, inspection and storage

3.1 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 cord should be rolled up and placed under the handle when carrying the dehumidifier, see *Figure 3.1* .

Figure 3.1 Power cord placement

3.2 Inspection of delivery

1. Inspect the delivery and compare with the delivery note, order confirmation or other delivery documentation. Make sure that everything is included and nothing is damaged.
2. Contact Munters immediately if the delivery is not complete in order to avoid installation delays.
3. If the unit is to be put into storage prior to installation, see section *Storing the equipment.*
4. Remove all packaging material from the unit, and make sure that no damage has occurred during transportation.
5. Any visible damage must be reported in writing to Munters within 5 days and prior to installation of the unit.
6. Dispose of the packaging material according to local regulations.

3.3 Storing the equipment

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, frost, rain and aggressive contaminants.

4 Installation

4.1 Safety

WARNING!

Do not connect the unit to other mains voltage than specified on the identification plate.

The unit must be connected to an earthed electrical outlet.

Do not operate the unit if the power plug or cord is damaged.

CAUTION!

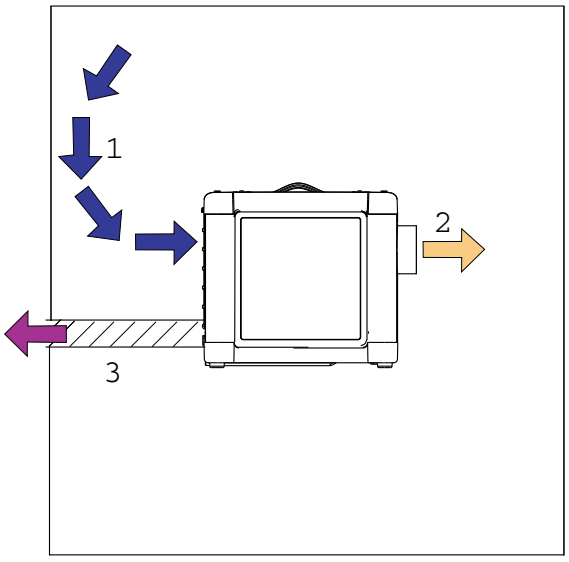
Do not sit, stand, or place any objects on the unit.

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.*

4.2 Closed system

The dehumidifier is placed in the space to be dehumidified. The wet air is transported outdoors with ducting. The process/reactivation air is taken from 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.

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.



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

Figure 4.1 Closed system principle

4.3 Open system

The dehumidifier is placed outside the area to be dehumidified. Dry air is transported with ducting to the space to be dehumidified and the wet air is discharged in the vicinity of the unit or moved outdoors, see *Figure 4.2* . 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.

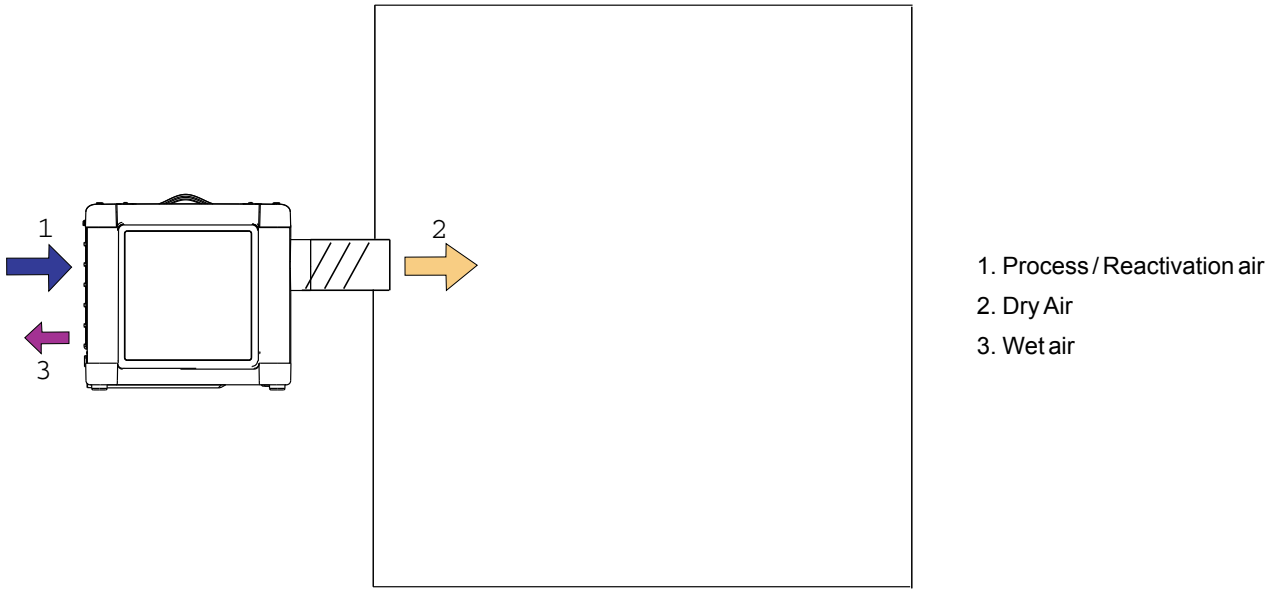


Figure 4.2 Open system principle

4.4 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, seek advice from Munters. 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 *10.1, Dimensions and service space.*

If the dehumidifier is intended to be placed on a bracket we recommend our specially designed wall bracket, see*4.8, Accessories.* Always leave minimum 10 cm space between the unit and the wall.

4.5 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 minimise 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 fans fitted in the dehumidifier.

NOTE! *Maximum length of dry air hose is 25 metres.*

4.5.1 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.

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

4.5.2 Ductwork for wet air outlet

Wet air ducting must be in corrosion- resistant material and must be capable of withstanding temperatures of up to 70 °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.

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/metre 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.

4.5.3 Connecting the wet air hose

Step	Action	Illustration
1	The wet air outlet is hidden for transportation purposes. Pull out the outlet at the job site.	
2	Twist the outlet in the direction of the arrow to lock and secure it in position.	
3	Connect the hose. Outlet diameter is 50 mm.	

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

4.6 Electrical connections

The dehumidifier is delivered with a 2,7 metre power cable, equipped with an earthed plug. The main electrical components are installed in the upper part of the unit.

CAUTION!

Do not connect the unit to other mains voltage than specified on the unit's identification plate.

The mains frequency can be adjusted, see *Table 7.5*.

NOTE! *In case of a fixed installation where the plug is replaced by a circuit breaker, check that the fuse rating in the circuit breaker is correct.*

4.7 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 might 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 appliance inlet. An indoor remote control, external humidity/temperature sensors or an external signal box can be connected to these CAN BUS ports. It does not matter which of the above devices will be connected to which port. When no port is used the two empty termination plugs must be fitted to the ports.

Figure 4.3 Remove the cover

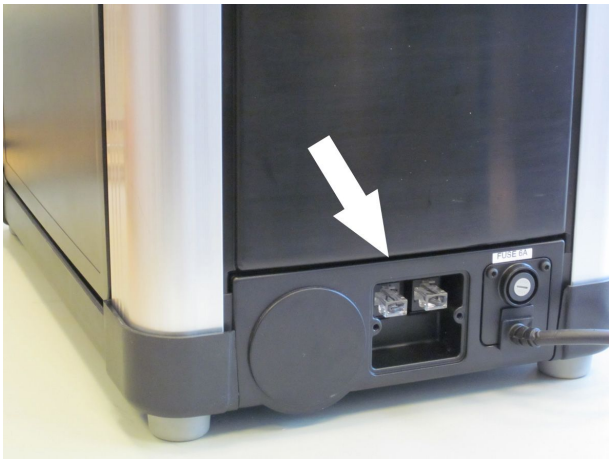


Figure 4.4 , 2 CAN BUS ports with empty plugs fitted

4.8 Accessories

There are some accessories available as options to the dehumidifier.

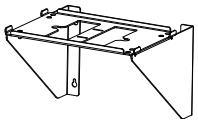
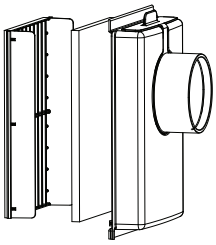
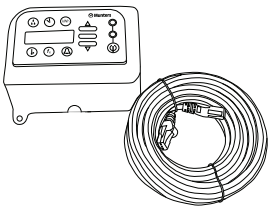
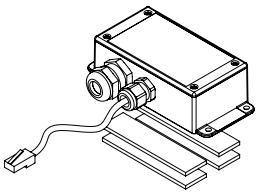
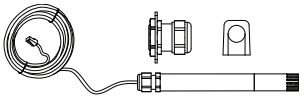
Wall Bracket. The unit can be mounted on the wall.

Stub Pipe Kit is used when there is a need to connect an inlet duct or hose to the dehumidifier.

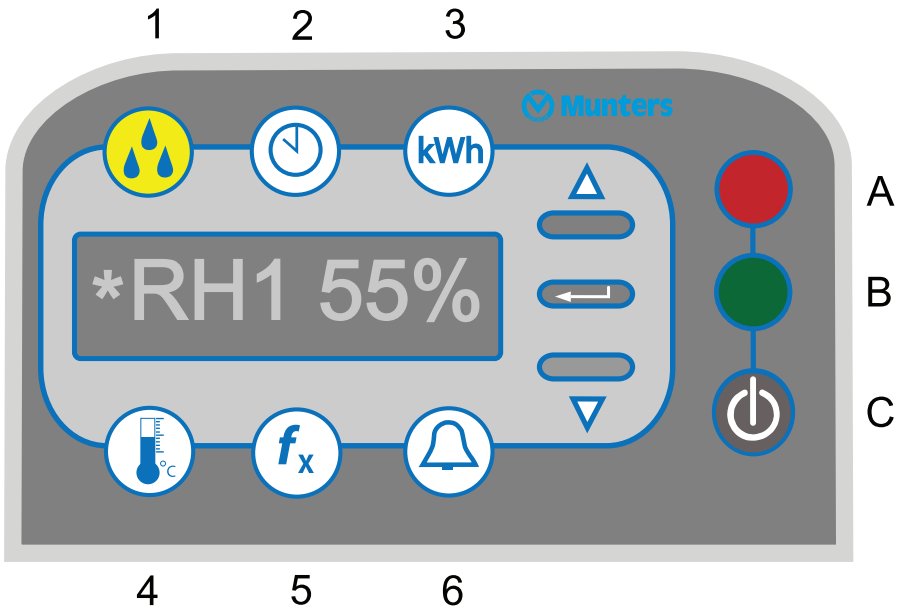
Remote Control makes it possible to control the unit from distance, delivered with a 10 metre cable.

External signal box is used when there is a need to connect to an external control system.

Remote RH/T sensor for external measuring of humidity and temperature.

	Wall Bracket
	Stub Pipe Kit
	Remote Control
	External signal box
	Remote RH/T sensor

5 Control panel overview



Menu indicators 1-6

1. Humidity menu
2. Time menu
3. Power menu
4. Temperature menu
5. Functions menu
6. Alarm menu

A. Alarm indicator
B. Operation indicator
C. On/Off button

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

Table 5.1 Menu button functions

6 Operation

6.1 Safety

WARNING!

Do not operate the unit if the power plug or cord is damaged.

Do not insert fingers or any other objects into the air vents.

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

CAUTION!

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

6.2 Introduction

6.2.1 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 *7.1, Humidity* and *7.5, Functions*.

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.*

6.2.2 Fan modes

Depending on the application, if fixed or temporarily installed etc., the dehumidifier can be run in different process fan modes: Fan "ON" (continuous), "INT" (INTermittent) or "DEM" (on DEMand). For further explanation, see *7.5, Functions*.

6.2.3 Fan speed

There are three process fan speed settings available: "HIGH", "NORM" and "LOW". The speed is manually set by the operator. For further explanation, see *7.5, Functions*.

6.3 Initiation and start

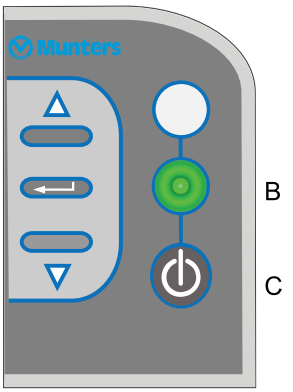
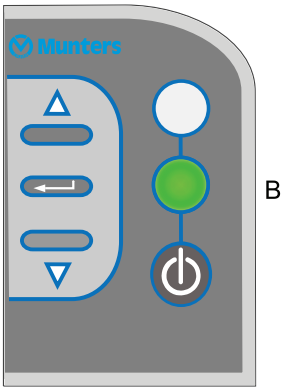
6.3.1 Boot the control system

Connect the dehumidifier to mains. **Result:** The control system will initiate by flashing all LEDs for a few seconds, and the display first shows the ComDry machine type [[M190Y], then the set frequency, e. g. [50Hz] and finally the software version number, e. g. [VER: 1.00] and the current humidity level, e. g. [*RH1 46%].

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

6.3.2 Start the dehumidifier

Follow these steps to start the dehumidifier:

Step	Action	Illustration
1	Press the On/Off button (C) once to start the dehumidifier. **Result:** 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.	
2	The dehumidifier starts to dehumidify when the measured humidity is equal or greater than the Set Value, and the operating indicator (B) will shift to continuously lit.	

6.4 Stop the dehumidifier

CAUTION!

Do not unplug the dehumidifier while it is cooling down. If unplugged it might lead to permanent unit damage.

Follow these steps to stop the dehumidifier:

Step	Action	Result/Illustration
1	Press On/Off once to stop the dehumidifier.	The green operating indicator starts flashing with equally long and short on and off periods.
2	The unit continues to run for a while in order to cool down and then stops.	

6.5 Emergency

CAUTION!

Only quick stop the dehumidifier in the 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 switch.

6.6 Automatic start after power failure

If the dehumidifier is switched on it will revert to operation after a power failure, regardless of if it was running or in stand-by.

6.7 Navigate the menus

The three buttons , and on the control panel make it possible to navigate the menus.

Follow these steps to navigate the menus:

Step	Action	Result/Illustration
1	To select a menu, press or . until the selected menu appears.	The selected menu indicator is lit.
2	To enter the menu, press .	The menu indicator starts flashing.
3	Use or to scroll through the menu.	
4	Leave the menu by using and go to [EXIT]. Press .	The menu indicator stops flashing.

NOTE! *All menu lists are circular. At the end of each menu you will find [EXIT]. The quickest way of navigating there is to press one time after having entered a menu.*

6.8 Access the control system

The control system settings and counters are protected against unauthorized change using two access levels. See also section *6.14, Access levels*.

Follow these steps to access the system:

Step	Action	Result/Illustration
1	To change the settings you must have "one-star" access. Go to menu Functions, see section *6.7, Navigate the menus*.	The menu indicator is flashing.
2	Scroll up to [ACCESS] using .	
3	Press and hold until [ACCESS] changes to [ACCESS *].	The system is now unlocked, and it is possible to make new settings alternatively reset the counters.
4	A higher, PIN-code protected, "two-star"access level exists. If an attempt to get higher access is made with the machine switched off, the display will change to [0 0 0 0]. Press four times until [ACCESS *] is visible again.	

NOTE! *The system will return to locked mode automatically after five minutes without any activity.*

NOTE! *The system always starts in locked mode after power-up (or power failure), regardless of access level prior to unplugging the unit.*

Follow these steps to force the system into locked mode:

Step	Action	Result/Illustration
1	Make sure the unit is switched off.	
2	Go to menu "Functions"	
3	Navigate to [ACCESS *]. See general instruction in section *6.7, Navigate the menus*.	
4	Start the unit by pressing On/Off.	The green light illuminates
5	Press and hold until [ACCESS*] changes to [ACCESS].	The system is now locked, and it is not possible to make new settings or to reset the counters.

6.9 Change the system settings

To change settings you must have "one-star" access, see *6.8, Access the control system*.

Follow these steps to change the system settings:

Step	Action	Result/Illustration
1	Navigate to the parameter you want to change by using  or  .	
2	Press  .	The setting starts to flash.
3	Change the value with  and  .	
4	Confirm the new setting with  .	The setting stops to flash.

NOTE! *If the new setting is not confirmed within 30 seconds, the display changes back to the old setting.*

NOTE! *Read-only values are not changeable. They will not start to flash if*  *is pressed, regardless of access level. To find out if a parameter is changeable or read-only, see section 7, Menus and parameters.*

6.10 Reset an alarm

Follow these steps to reset an alarm:

Step	Action	Result/Illustration
1	Write down the alarm message before resetting the alarm. The information might be helpful when troubleshooting.	
2	Wait until the dehumidifier has stopped. Press  .	The display changes to [Rst NO]and [NO] is flashing. 
3	Toggle [NO] to [YES] by pressing either  or  . Confirm by pressing  .	When the alarm has been reset, the menu system returns to its start position.

NOTE! *If the cause of an alarm is still present, the alarm might be re-issued after resetting, even if the dehumidifier is stopped.*

6.11 Reset the counters

To reset counters you must have "one-star" access, see *6.8, Access the control system*.

Follow these steps to reset the counters:

Step	Action	Result/Illustration
1	Navigate to the counter you want to reset. See section *6.7, Navigate the menus*.	
2	Press 	The display changes to [Rst NO]and [NO] is flashing. 
3	Toggle [NO] to [YES] by pressing either  or  . **NOTE!** *If [Rst NO]/[Rst YES]is left without action for30 seconds, the display automatically changes back to the stored counter value.*	
4	Confirm the resetting with  .	The counter is reset.

NOTE! *Pressing ENTER when the display shows [Rst NO]will return the stored counter value in the display again.*

6.12 Service interval alarm

The Service interval [T-xxxx h] is settable between 500 and 8.000 hours. See also section *8.2, Maintenance schedule.*

To reset counters you must have "one-star" access. Follow these steps to change the service interval (see also *6.9, Change the system settings*):

Step	Action	Result / Illustration
1	Go to the Time menu.	
2	Navigate to "Service interval" [T-xxxx h]	
2	Adjust the "Service interval" [T-xxxx h] in steps of 100 hours	
3	Reset the "Time to service" counter [S xxxx h].	

NOTE! *The "Time to service" counter can be reset at any time. When the counter is reset, it starts counting up or down again from the pre-set value [T-xxxx h] depending on how the "Service interval" has been adjusted.*

The Time to service counter [S xxxx h] counts down to zero. When it reaches zero, the system issues a "soft alarm" the next time the unit is switched on. The alarm only makes the alarm menu symbol flash, not the red alarm indicator, and [TIME FOR SERVICE] is shown in the display. The alarm will not make the unit stop. The unit can still be operated as normal with the alarm present.

Follow these steps to check the service parameters and stop the service alarm:

Step	Action	Result / Illustration
1	To see or check parameters, either reset the alarm by pressing  and reset it, or leave the Alarm menu with [EXIT].	
2	To stop the alarm completely, navigate to the "Time to service" counter [S 0000] in this menu and reset it.	

NOTE! *Even if the alarm has been reset in the Alarm menu, it will be re-issued the next time the unit is switched on.*

See *8.2, Maintenance schedule* for proper maintenance action.

6.13 Restore the default settings

To restore the factory default settings you must have "one-star" access, see *6.8, Access the control system*.

Follow these steps to restore all the default factory settings:

Step	Action	Result/Illustration
1	Go to the Functions menu and navigate to Default.	
2	Press 	The display changes to [Rst NO]and [NO] is flashing. 
3	Toggle [NO] to [YES] by pressing either  or 	
4	Confirm by pressing  .	All values reverts to factory settings.

6.14 Access levels

The following access levels and actions are available in the control system:

Access level	Available actions	Comment
ACCESS	View all processing data	
ACCESS *	▪ View all processing data ▪ Adjust relevant parameters (fan speed, set value RH, reset h or kWh etc.)	
ACCESS **		▪ Level 2 is for dedicated personnel only (qualified personnel or Munters Service) ▪ If you have accidentally reached this level the code is 0000 for returning to level 1.

7 Menus and parameters

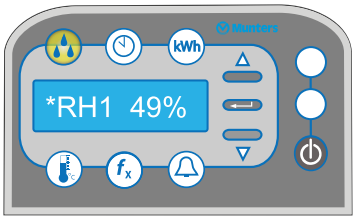
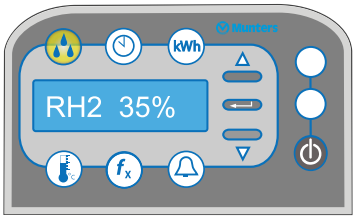
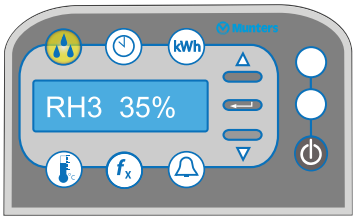
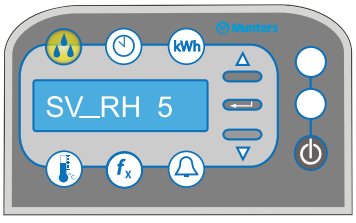
To set the system parameters, see *6.9, Change the system settings* and *6.11, Reset the counters.* For limits when setting parameters, see *7.7, Min, max and default values.*

7.1 Humidity

The dehumidifier is always operating in automatic mode. It will dehumidify until the desired humidity level (Set Value minus Hysteresis value) is reached. Then the green operating indicator will start to flash in a long on and short off sequence, indicating that the dehumidifier is in stand-by. It will start to dehumidify again when the humidity is equal to, or greater than the Set Value.

Type of humidity control (relative humidity, dew point or absolute humidity) and unit system (metric or imperial) governs the readings and settings in this menu. See *7.5, Functions* for reference and explanation.

This table shows the display views and possible settings of the Humidity menu:

Display view	Description	Type	Setting option
	Internal sensor reading	READ ONLY	D1.../ X1...
	(External sensor reading)[1]	READ ONLY	D2.../ X2...
	(External sensor reading)[1]	READ ONLY	D3.../ X3...
	Set Value Humidity	ADJUSTABLE	HIGHER/LOWER

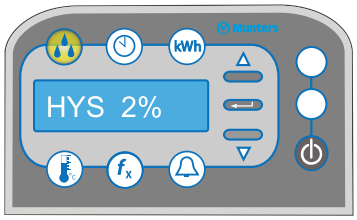
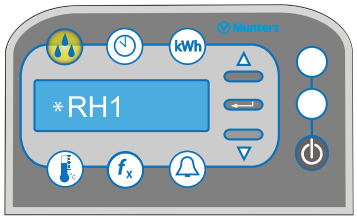
Display view	Description	Type	Setting option
	Hysteresis	ADJUSTABLE	HIGHER/LOWER
	Controlling sensor	(ADJUSTABLE)[1]	(*RH2)[1], (*RH3)[1]
[1] Only when external humidity sensors are connected			

Table 7.1 Humidity menu

7.1.1 Internal controlling sensor

The internal humidity sensor is the controlling sensor as default. This is indicated by a (*) before the reading in the display (*RH1… / *D1… / *X1…).

7.1.2 External controlling sensors

Optionally, up to two external sensors can be connected. They will automatically be designated (RH2 / D2 / X2) and (RH3 / D3 / X3) by the system (number two being the first connected in the chain). When connected, it is possible to choose one of the external sensors as control. The display will then show (*RH/D/X2…) or (*RH/D/X3…).

With an external sensor set as control sensor, it is possible to disconnect and reconnect the external sensor/-s without losing the control setting, e.g. [*RH2…] while the unit is switched off (but powered). When switched on, the system makes five attempts (during approx. 20 seconds) to contact the external controlling sensor. If this fails, the system reverts to the internal RH1-sensor. Subsequently any renewed assignment of the external sensor as control must be carried out manually.

7.2 Run time

Run time is registered as long as the process air fan is operating. It stops counting when the unit is in stand by mode or is switched off. The system has two run time counters, one resettable trip meter and one non-resettable total run time counter.

This table shows the display views and type of information of the Time menu:

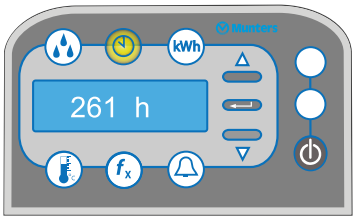
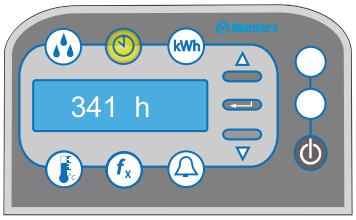
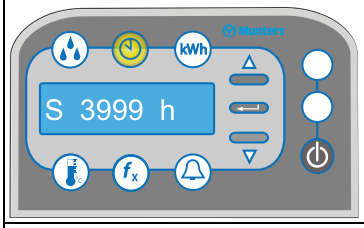
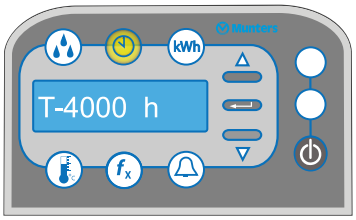
Display view	Description	Type	Setting option
	Run time trip meter	RESETTABLE	Yes / No
	Total run time (Display jumps from "TOTAL" to display view and back).	READ ONLY	
	Time to service	RESETTABLE	Yes / No
	Service interval	ADJUSTABLE	Every 100 hours

Table 7.2 Time menu

7.3 Power

The ComDry dehumidifier is equipped with an integrated, resettable kWh counter. The energy consumption is registered when the dehumidifier is connected to mains, regardless of being switched on, off or in stand-by mode. The counter shows the consumption as whole kW-hours.
It is also possible to monitor real time Power (W), current (A) and voltage (V) measurements in this menu.

NOTE! *Resetting is always performed manually. Unplugging the unit (or a power failure) will not reset the kWh counter.*

This table shows the display views and type of information of the Power menu:

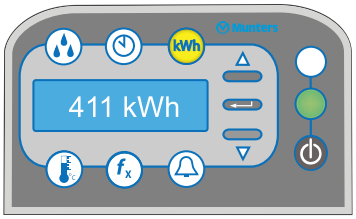
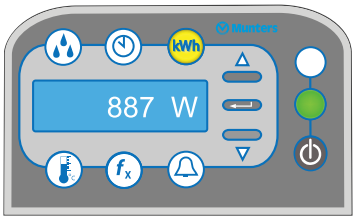
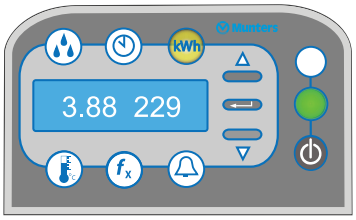
Display view	Description	Type	Setting option
	kWh counter	RESETTABLE	Yes / No
	Real time Power	READ ONLY	
	Real time Current/Voltage	READ ONLY	

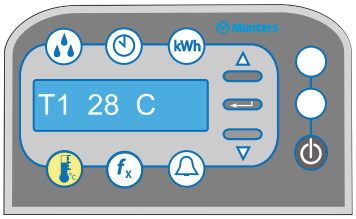
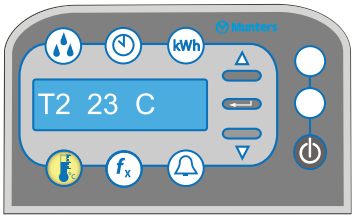
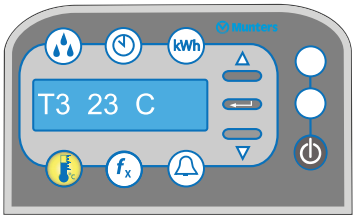
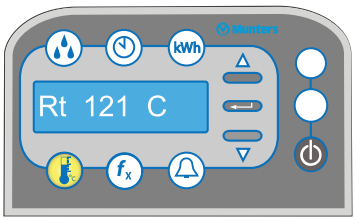
Table 7.3 Power menu

7.4 Temperature

The air temperature is measured in different positions in the dehumidifier. All values are read-only. If external humidity/temperature sensors are connected, these will also be found in the list. The reactivation inlet temperature (Ri) before the heater and reactivation temperature (Rt) after the heater, as well as the wet air temperature (Wt) and the process air inlet temperature (T1) is measured.

NOTE! *The temperature will be shown in Celsius (metric, SI) or Fahrenheit (imperial, IP), depending on the units setting in the Functions menu.*

This table shows the display views and type of information of the Temperature menu:

Display view	Description	Type	Setting option
	Process air inlet temperature (internal sensor)	READ ONLY	
	(External sensor)[1]	READ ONLY	
	(External sensor) [1]	READ ONLY	
	Reactivation temperature	READ ONLY	

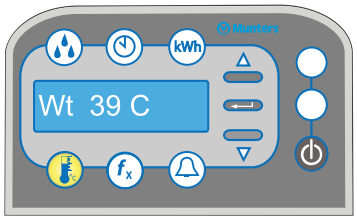
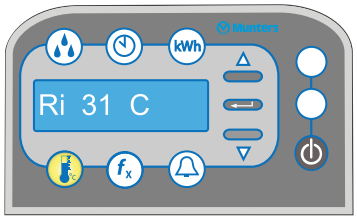
Display view	Description	Type	Setting option
	Wet air temperature	READ ONLY	
	Reactivation inlet temperature	READ ONLY	
[1]) Only if external sensor is connected			

Table 7.4 Temperature menu

7.5 Functions

7.5.1 Process fan speed

To set fan speed you must have "one-star" access, see *6.8, Access the control system* . The process fan speed can be set to [Spd HIGH], [Spd NORM] or [Spd LOW]. The capacities and fan curves in section *10.2, Capacity diagram* and *10.3, Fan curve process air* are given at HIGH speed. NORMAL speed will reduce the capacity slightly, while LOW speed gives approximately 50% capacity.

See *7.5.2, Process fan mode* for how to set the fan parameters.

7.5.2 Process fan mode

There are three process fan modes:

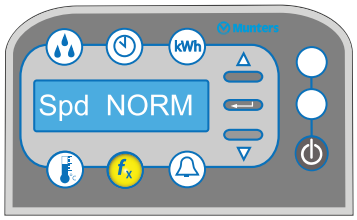
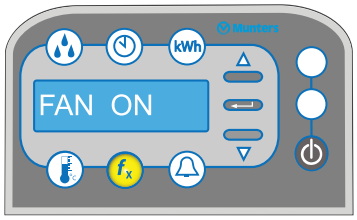
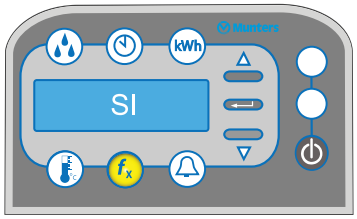
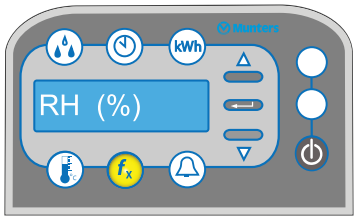
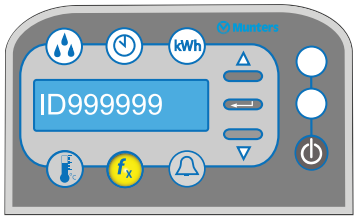
Fan mode	Description
[Fan ON]	In [Fan ON] mode, the dehumidifier will run the process fan continuously, regardless of there is a dehumidification need or not. This is the default mode.
[Fan INT] (INTermittent)	In [Fan INT] (INTermittent) mode, the fan will stop when the desired humidity (Set Value minus 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] (on DEMand)	In [Fan DEM] (on 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.

7.5.3 Humidity control and units

The internal humidity/temperature sensor, "RH1" (located behind the process air filter), makes it possible to set the control/presentation of the humidity to either Relative humidity (RH%), Dew point (Dp °C) or absolute humidity (X gr/kg). Depending on unit system setting, SI for metric or IP for Imperial, the readings will be shown in Celsius and g/kg, or Fahrenheit and grain/lb. All these settings are made in the Functions menu.

7.5.4 Display information

This table shows the display views and type of information of the Functions menu:

Display view	Description	Type	Setting option
	Process fan speed	ADJUSTABLE	Spd HIGH, NORM, LOW
	Process fan running modes	ADJUSTABLE	Fan ON, INT, DEM
	Metric or imperial units	ADJUSTABLE	SI, IP
	Humidity	ADJUSTABLE	RH, Dp , Absolute humidity
	Unit serial no	READ ONLY	ID no
	ACCESS Level	ADJUSTABLE	ACCESS *

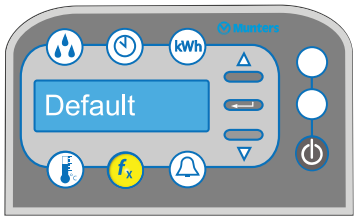
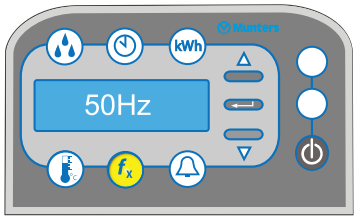
Display view	Description	Type	Setting option
	Restore to default settings (only possible when dehumidifier is OFF).	RESETTABLE	Yes or No
	Mains frequency	ADJUSTABLE	50 or 60 Hz

Table 7.5 Functions menu

7.6 Alarm

Should an operation fault occur, the red alarm indicator and the alarm menu indicator will start to flash. The cause of the alarm will be shown in the display and the dehumidifier will stop after it has cooled down, which might take a couple of minutes.

CAUTION!

Do not unplug the dehumidifier while it is cooling down – the underlying reason for the alarm might be overheating.

This table shows the display views and type of information of the Alarm menu:

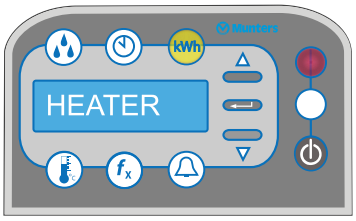
Display view	Description	Type
	Source of alarm in full text	RESETTABLE
	Alarm status	READ ONLY

Table 7.6 Alarm menu

7.7 Min, max and default values

7.7.1 Humidity

This table shows the minimum, maximum and default humidity values:

Parameter		RH (%)	Dp (°C)	X (gr/kg)	Dp (°F)	X (grain/lb)
SV_RH 50% (set value)	Max.	95	40	40	99	300
	Default	50	9	7,3	49	51
	Min.	5	-30	0,5	-20	2
HYS 2% (hysteresis)	Max.	10	10	1,0	10	10
	Default	2	2	0,2	2	2
	Min.	0	0	0,0	0	0

Table 7.7 Minimum, maximum and default humidity values

7.7.2 Service time

This table shows the minimum, maximum and default service time values:

Parameter	Default setting	Max.	Min.
T-4000 h (service time)	4000	8000	500

Table 7.8 Time, min/max and default service time values

7.7.3 Functions

This table shows the default settings and setting options of the Functions menu:

Parameter	Default setting	Options
Spd NORM	Spd NORM	Spd HIGH, Spd LOW
Fan ON	Fan ON	Fan INT, Fan DEM
SI (unit)	SI (metric units)	IP (imperial units)
RH (%)	RH (%)	Dp (°C / °F)
		X (gr/kg) / (grain/lb)

Table 7.9 Default settings and setting options of the Functions menu

8 Service and maintenance

8.1 General

WARNING!

- Do not attempt to repair, dismantle or modify this unit.

- Remove 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. Under normal operating conditions, maintenance requirements are minimal. 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 addresses on the back page of this manual.

8.2 Maintenance schedule

Munters recommends the following 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, preventative maintenance should be performed at shorter intervals than those specified below.

Component	Inspection/maintenance	
	4000 hours/6 months	8000 hours/12 months
Process filter	Clean the filter cartridge. Clean the filter housing and replace the filter if necessary.	Clean the filter housing and replace the filter.
Unit casing	Check 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 check.	Check the sensor function and replace as necessary.
Functionality and performance check	No corrective action or check.	Perform a complete functionality and performance check, and replace worn parts as necessary.

8.3 Process air filter change

The principle is the same for all models.

1. Push the filter frame down.

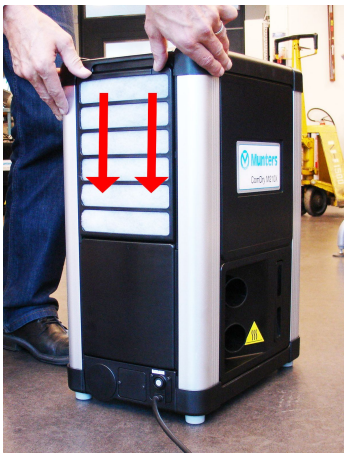


Figure 8.1

2. Pull the filter holder outwards and remove it from the unit.

Figure 8.2

3. Remove the old filter.
4. Replace it with a new filter.

Figure 8.3

9 Fault tracing

WARNING!

The unit must not be opened by anyone other than trained and qualified personnel, due to the risk of electrical shock.

This chapter is intended to facilitate basic troubleshooting and to provide instructions for corrective actions. Go through the troubleshooting list below. Contact Munters if the problem cannot be rectified.

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 cord 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 R_tTEMP]	- Over temperature protection fuse might have tripped - Blocked filter, hose or duct - Blocked reactivation impeller	Wait until the unit has stopped. Then disconnect the power supply. Check that the filters, hoses or ducts are not clogged. To reset the over temperature protection fuse, the unit must be disconnected from the mains and allowed to cool down. 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. 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.

Symptom	Indication/Alarm message	Possible cause	Action
Indication	Alarm message: [TIME FOR SERVICE]		See section *Service interval alarm*.
	Alarm message: [NO COM]	CAN BUS empty 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.

Table 9.1 Fault tracing list

10 Technical specification

10.1 Dimensions and service space

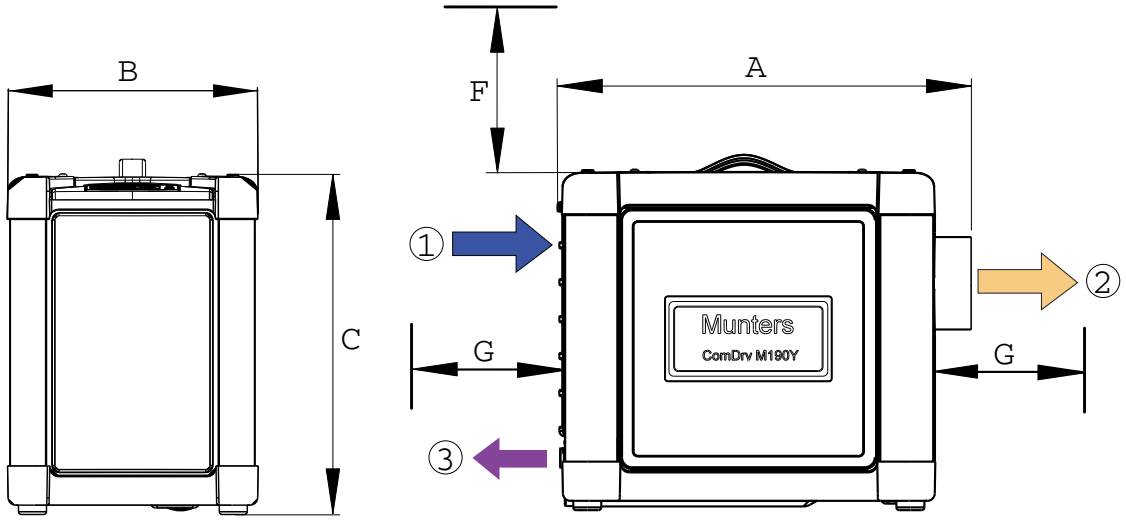


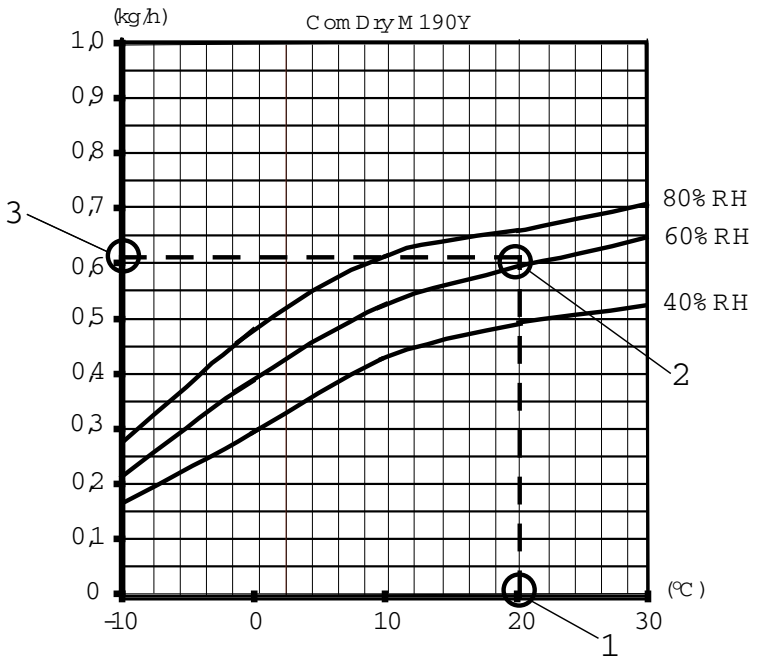
Figure 10.1 Dimensions, ComDry M190Y

1. Process/reactivation air inlet
2. Dry air outlet
3. Wet air outlet

Width (A)	Width (B)	Height (C)	Diameter (Dry air)	Diameter (Wet air)	Service space (F)	Service space (G)	Weight
445 mm	270 mm	365 mm	100 mm	50 mm	350 mm	500 mm	11.5 kg

Table 10.1 Dimensions and weight

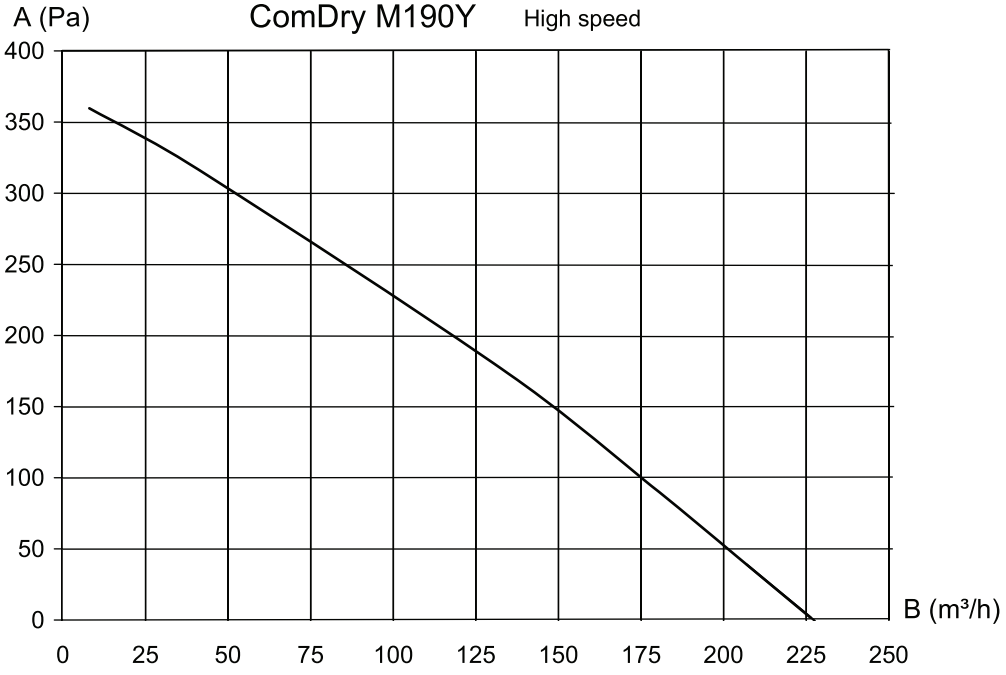
10.2 Capacity diagram



1. Temperature, process air (°C)
2. Relative Humidity, process air (% RH)
3. Dehumidification capacity (kg/h), (moisture removal (kg/hour))

Figure 10.2 Capacity diagram

10.3 Fan curve process air



Density 1,2 kg/m³

A. Static pressure (Pa)
B. Airflow (m³/hour)

Figure 10.3 Fan curve

10.4 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		
Drive Motor Power (W)		5
Sound pressure level, Low speed free-blowing process fan (dBA)		51
Sound pressure level, Normal speed free-blowing process fan (dBA)		56
Sound pressure level, High speed free-blowing process fan (dBA)		63
Electrical protection class (casing)		IP33
Electrical protection class (electric panel)		IP54
Fan Motor Winding Insulation Class		Class B
Drive Motor Winding Insulation Class		Class B
Rotor type		HPS
Air filter G 3, article number		150-012054-001
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	**Version**	
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.

Table 10.2 Technical data M190Y

11 Scrapping

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

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

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

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.

12 Contact Munters

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