

# High quality air for high quality food

Climate control for  
food applications



# Humidity control makes the difference

As the world's biggest supplier of desiccant dehumidifiers and air handling solutions, Munters has an extensive experience as to techniques to fully control climate conditions.

## Munters air treatment solutions:

- Improve both product quality and production output
- Saving energy
- Lowering the cost per produced item

Price and quality are two parameters of highest importance when it comes to food products. Finding ways to increase production throughput and reduce energy consumption, thereby lowering the price per produced item, is a constant challenge.

So is the product quality which is highly affected by climate conditions. In particular by the consequences of an uncontrolled level of humidity.

## Seeking winter production conditions all year round?

Outdoor winter conditions with a low absolute humidity provide an ideal production climate for most processes within the food industry. In summer conditions however, many food processes are adversely affected by the increased humidity levels, creating multiple problems associated with condensation.

Leave it to Munters to create stable conditions all year round – your guarantee for reliable quality, less waste and longer shelf life.

## Hygiene and workers safety

By controlling the relative humidity, condensation can be prevented and the growth of mould and fungus is greatly reduced. As part of a coordinated programme, this can help to satisfy the requirements of hygienic regulations such as HACCP and secure a comfortable, safer and healthy climate for employees.



Improved product quality and output



Energy efficiency



Improved workers safety



Condensation control

# Certified for your safety



With a global network of production facilities certified to ISO9001 and ISO14001, Munters places the highest priority on environmental considerations, in a constant ongoing process, involving all employees. All products leaving our premises are thoroughly tested to ensure smooth operation and minimum energy consumption. Furthermore some of our systems are available in special hygienic versions. With extra smooth surfaces, easy to clean – ask for Hygenius™

## Rotor properties – independently certified

Health, safety and hygiene for customers is essential to Munters which is clearly reflected in the design of the rotors. Our rotors are continuously being tested independently and most recently our HPS and Quantum™ have been proven by *The Swedish Institute for Food and Biotechnology* to have both bactericidal and fungicidal properties.

The HPS rotor is the High Performance Silicagel rotor used in most of our desiccant dehumidifiers. For demanding drying processes the Munters Quantum™ rotor provides even higher levels of performance, offering a DeltaX as high as 12-15 g. This saves energy by eliminating the need for pre-cooling, whilst facilitating a hygienic process without any wet surfaces, thus providing a safe solution for food and pharma industry customers worldwide.

# Energy optimisation

Thanks to the ongoing research and development in our world wide organisation, our products and solutions are continuously refined and optimised.

Having Munters as your service partner means that all measures are taken to optimise the energy efficiency of your air handling equipment.

Our service engineers are your speaking partners when it comes to conversion to alternative energy sources, for retrofit energy recovery sectors and advanced control solutions.

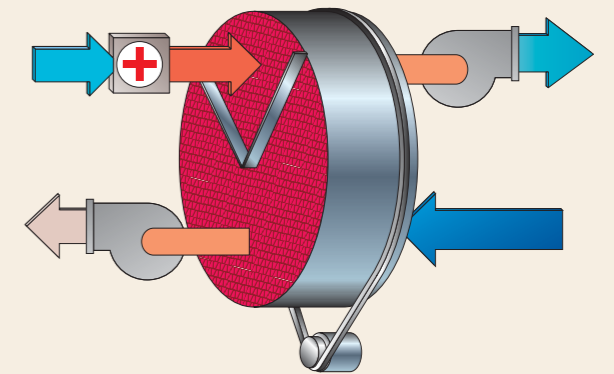
## Munters environmentally friendly desiccant technology

Like most good ideas, Munters dehumidification principle is basically simple. As functioning without any cooling coils Munters desiccant dehumidifiers use no CFC's, HCFC's or gases linked with ozone depletion.

We provide you with a greener alternative to other dehumidification techniques while protecting our fragile environment.

## Innovation and improved energy efficiency

The basic principle of desiccant dehumidification developed by Carl Munters more than 60 years back is still the most efficient drying technique known today. By optimising rotor material and the control of the desiccant rotor, Munters is able to improve dehumidification capacity and reduce energy consumption. The Quantum™ rotor and internal rotor heat recovery systems are examples of Munters' environmentally friendly thinking, resulting in higher production capacity and lower energy bills



Energy savings up to 35% with Munters Purge sectors and Quantum™ rotor.





## Energy saving air treatment solutions for any application

### MOAS

Munters Outdoor Air Systems are providing comfortable climate conditions for both customers and products e.g. in supermarkets. Attached to the premises existing ventilation system MOAS can be installed as a retro fit to treat the outdoor air in an energy efficient way. Gone are the days with the feeling of cold and drafting ventilation as MOAS ensures a fully controlled and comfortable humidity.



Munters DSS Pro

### Systems for full climate control

System solutions for demanding process applications. Combining the desiccant technology with pre- and post treatment processes like cooling, heating, humidification and filtration Munters' system solutions offer full control of both temperature and humidity.

Munters' systems are built up by modules according to your specific needs. A system solution reduces the foot print, requires only one supplier and after sales partner and by means of the range of energy saving options you will always benefit from the best energy efficiency available.

The majority of Munters' system solutions are available for outdoor installation also.

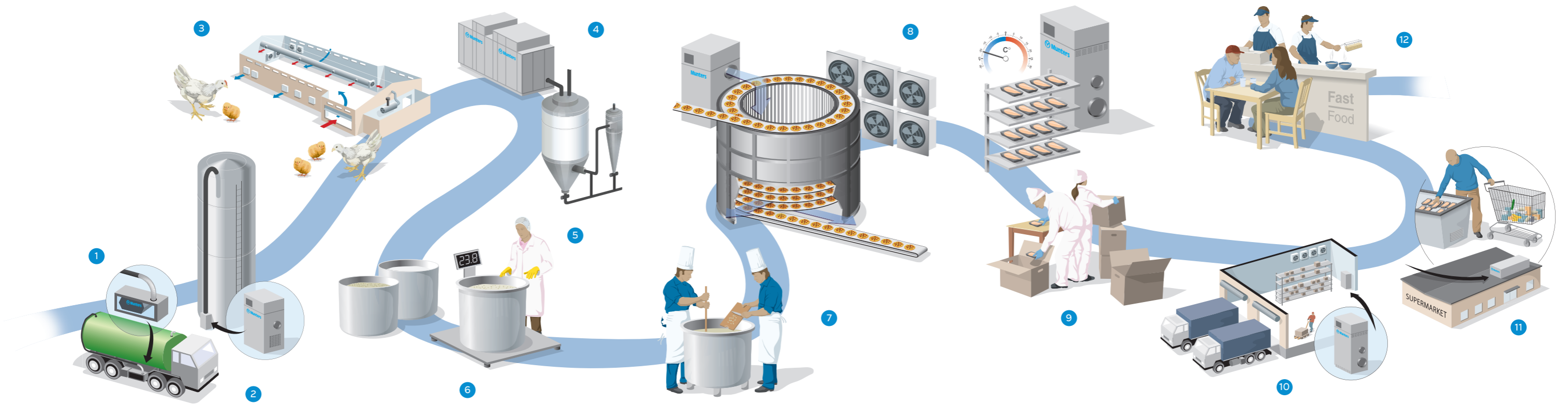
### Stand alone dehumidifiers

Munters stand alone dehumidifiers provide the dry air needed to optimise climate conditions in warehouses, cold stores, transport systems and production facilities.

Based on decades of experience Munters offers a global range of standard units, easy to install, easy to maintain, and offer a number of control options and product finishes to suit your operating or hygiene requirements.



Munters MX2 40 NX



# Munters production process solutions

## 1. R&D, lab and clean rooms

- Stable and fully controlled climate throughout the year
- No unplanned shutdowns due to humid summer weather
- Consistent, predictable indoor climate conditions
- Supports GMP appliance

## 2. Storage (0°C+)

- No condensation, mould and fungus in bulk tankers, haulage, silos = improved hygienic conditions
- Dry and pourable products, no clogging or sticky products in pneumatic transport systems
- Reduced cleaning requirements
- No softening and collapsing of packing/card paper boxes
- No problems as to adhesion and readability of labels
- High product quality is maintained = longer shelf life

## 3. Climate Control Systems for pig and poultry production

- High efficiency evaporative cooling of live stock buildings and greenhouses
- Low running costs
- Quick and easy to install

## 4. Freezing

- No ice build up in spiral freezers, plate freezers and cooling/freezing tunnels = no unplanned stop of production
- Reduced need of defrosting cycles = increased production capacity
- Eliminates negative effect of fluctuations in ambient air conditions = constant production climate around the year
- No ice or frost on products = improved product quality and less waste

## 5. Drying

- Faster drying processes in spray towers, fluid-bed systems and during coating = increased production capacity
- Munters' special designed and bacteriacidal certified Quantum™ rotor with high DeltaX
- Energy savings up to 25% in spray tower drying thanks to elimination of precooling
- Improved hygiene since wet surfaces are eliminated

## 6. Sorting/weighing/mixing

- No disturbing build up of ice causing interruption or inaccuracy
- Constant climate conditions secures reproducible processes
- No blocking condensation of dispensing equipment, scales etc. caused by condensation, ice and frost

## 7. Production rooms

- Faster drying after cleaning = increased production capacity
- Protection of electronic control panels = fewer interruptions
- Reduces risk of bacterial and mould growth
- Healthier working environments for staff

## 8. HACCP - Condensation Control

- Prevention of condensation on ceilings, walls and equipment
- Improved hygiene and work safety
- Protection of building structures and production equipment

## 9. Coating

- Constant coating conditions, regardless of the weather
- Constant and better surface quality
- Up to 30% shorter coating cycle = increased production capacity

## 10. Packing/Labeling

- Optimal packing climate for hygroscopic products = optimal product quality, reduced waste and longer shelf life
- Trouble-free labelling process throughout the year
- Clean packing machines = improved hygienic conditions and less cleaning requirements

## 11. Storage (below 0°C)

- Food Tech Award winning IceDry™ system for cold stores
- No fog, snow or ice built up
  - No slippery floors and better visibility = improved workers safety
  - Reduction of defrosting cycles needed
  - Improved output of evaporator coils
  - More smooth and faster handling at loading bays and airlocks

## 12. Air Conditioning / Comfort Cooling

- Energy efficient climate control of commercial spaces
- Internal heat recovery and systems for indoor and outdoor installation. Stand alone or integrated in existing AHU
- Comfortable and healthy climate for employees, shoppers and guests with fully controlled temperature and humidity



Case study:  
Maanen Bakery, the Netherlands

*"The problems with the bread products becoming soggy during cooling down have been solved by installing Munters desiccant dehumidification. All our bread products now keep the high quality and remain crispy."*

Peter Smit, van Maanen Bakery, the Netherlands



Case study:  
Kitchen Range Food, UK

*"The condition of the cold store has greatly improved and we are now snow and ice free for the first time in many years. Keeping evaporators free of ice also means we have been able to reduce daily defrosts from three per day down to two per day."*

Andy Gordon, Kitchen Range Food, United Kingdom

Case study:  
Aquapri A/S, Denmark

*"After installation of Munters dehumidification in our fish slaughtery facilities we got rid of condensation problems. We fulfil the HACCP regulations and our employees appreciate the improved and healthier indoor climate conditions."*

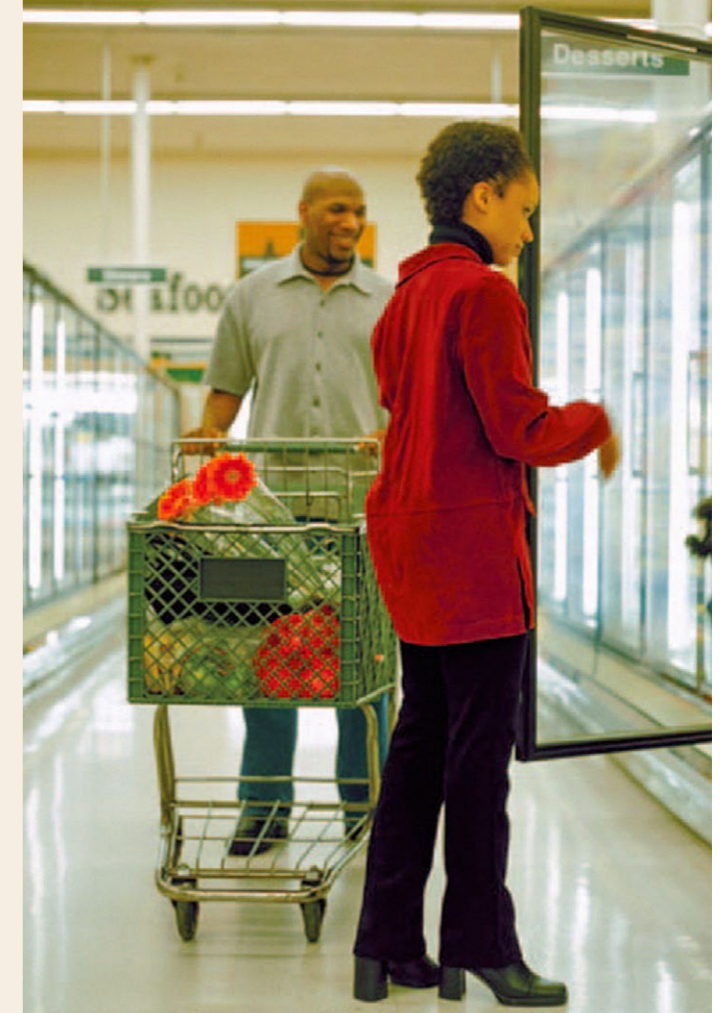
Jens Paag, Facility Manager, Aquapri A/S, Denmark



Case study:  
P&C Foods, Canastota, New York

*"Low humidity saves operating costs for display cases by reducing latent refrigeration load, defrost cycles and anti-sweat heater run-times. Having the desiccant system clearly provides benefits to our customers."*

Paul Joslyn, Energy Manager, P&C Foods, Canastota, New York



# Climate solutions for the future

And for your mission-critical processes

Founded in Sweden in 1955, Munters today has 20 manufacturing facilities across the globe and sales offices in more than 30 countries. With approximately 4,000 employees worldwide, we have net sales approaching €1 billion EUR.

Munters is a global leader in climate solutions for mission-critical processes. We offer innovative, efficient, sustainable solutions for controlling humidity and temperature, recovering energy, treating emissions, and using evaporative cooling for comfort, manufacturing, and environmental protection.

Sustainability is an important aspect of our business strategy and value creation. Our solutions help customers use resources efficiently, reducing their climate and environmental impact, ultimately contributing to a better climate and reduced carbon emissions.



## Munters Service portfolio

At Munters, we are committed to offering a complete portfolio of service offerings to support you throughout the entire lifecycle of your Munters equipment.

### Commissioning support

Our trained service technicians make sure your equipment is operating as designed so your investment gets the best possible start. We offer everything from basic unit start-up to extensive turnkey installations.

### Maintenance

Keep your equipment running like new with on-site visits by factory-trained technicians and regular rotor performance checks.

### Retrofit and upgrade

Boost energy efficiency and capacity with our retrofit solutions for equipment already in operation.

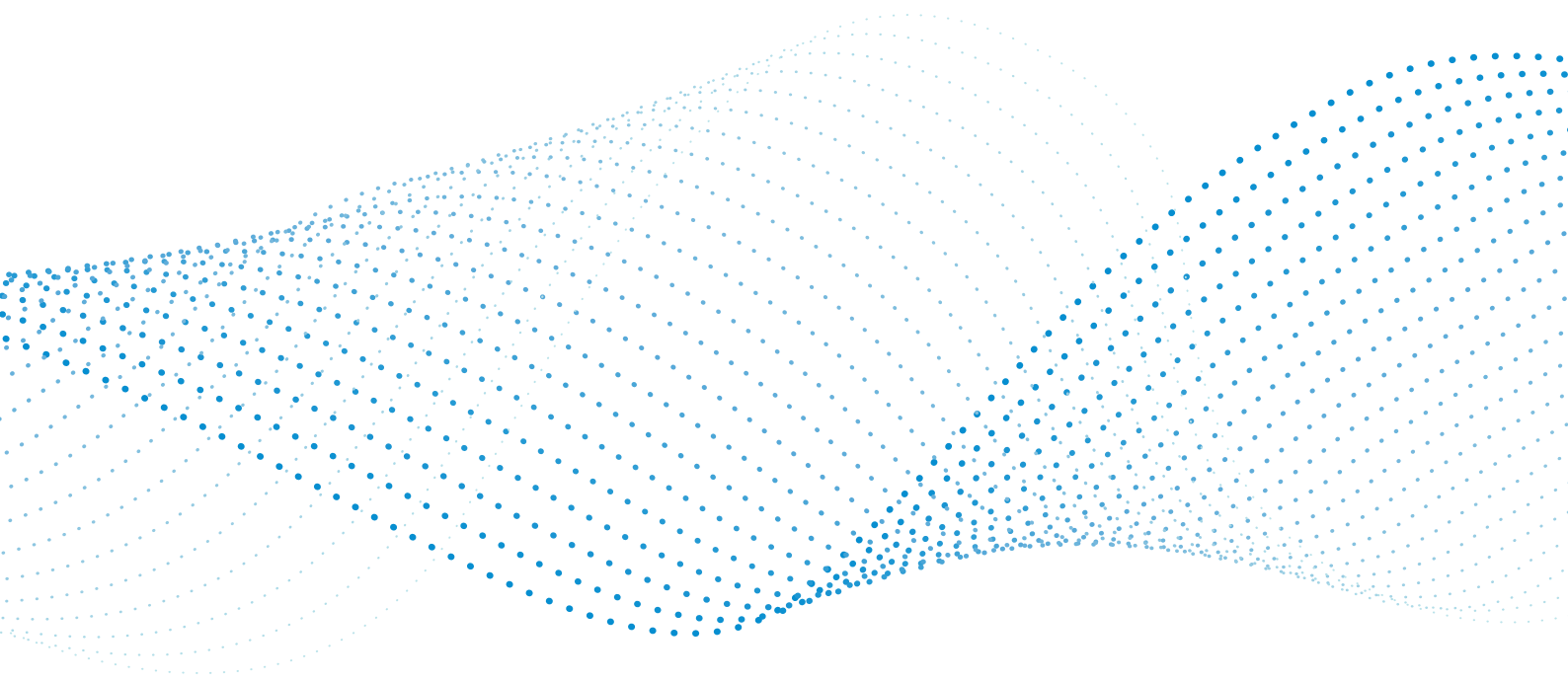
Upgrade controls, replace your rotor or upgrade your fan to maximize performance, save money and energy. Munters also custom fabricates zeolite blocks for replacement of all zeolite and carbon rotor systems.

### Munters Service Agreements

Ensure that your Munters equipment always performs according to specifications. Munters Service Agreements, tailored to your needs, offer industry-leading lifecycle care for your equipment – and peace of mind for yourself.

### Munters Genuine Parts

We use only Munters Genuine Parts, which are designed, tested, and verified to ensure that each part meets or exceeds specifications. Convenient service kits are made to make maintenance simple.



Munters is a global leader in energy-efficient air treatment and climate solutions. Using innovative technologies, Munters creates the perfect climate for customers in a wide range of industries.

Munters has been defining the future of air treatment since 1955. Today, around 4,000 employees carry out manufacturing and sales in more than 30 countries.

For more information, please visit [www.munters.com](http://www.munters.com)