



## ConvoSense

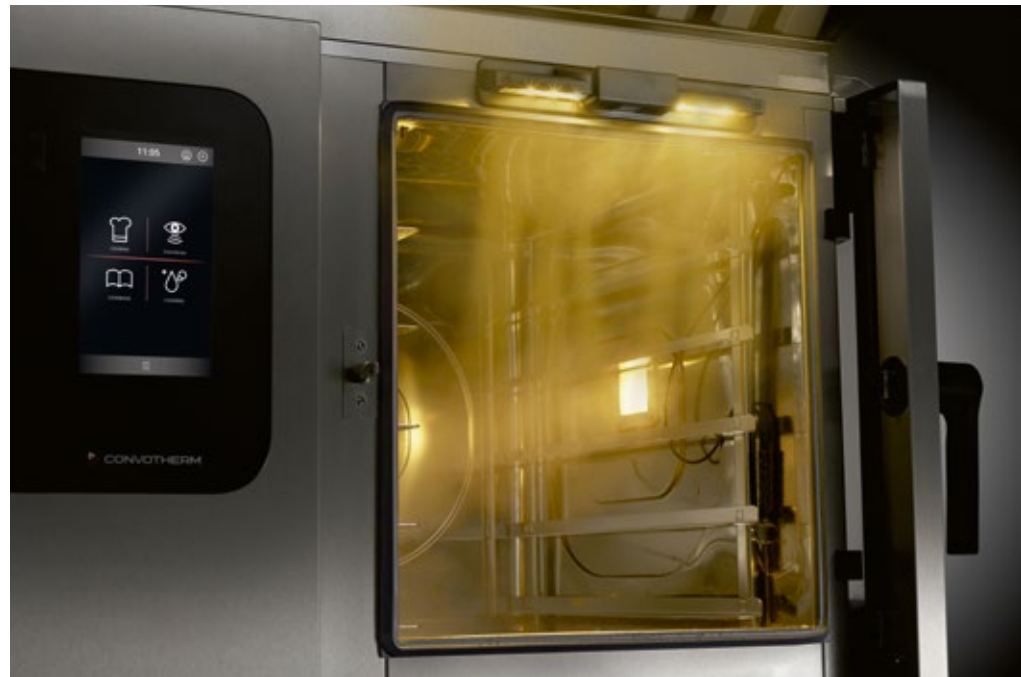
World's first combi oven  
with AI powered  
fully-automated  
cooking

***Advancing Your Ambitions***

**PATENT**

## ConvoSense: Recognize. Understand. Act.

The future of automated cooking and baking has begun: with ConvoSense, the innovative assistance system for Convotherm combi ovens. Artificial intelligence and cutting-edge sensor technology open up completely new perspectives in food preparation. For incomparable convenience. For maximized efficiency. For reliable results. ConvoSense – turns visions into reality.



### The future of cooking is automated

For decades, Convotherm has been working with great focus on the task of intelligently preplanning complex cooking processes in such a way that they can run largely automatically in the hectic daily routine. ConvoSense represents a decisive step towards making the vision of fully automated cooking become a reality. A future in which nothing is left to chance in food preparation. In which you can attain totally consistent quality – faster, more efficiently and more reliably than ever before. A future in which you and your staff are more relaxed and enjoy more convenience while carrying out your work.

**The best thing? This future is a reality already today. With ConvoSense.**

### Provides you with support – And promotes your strengths

With ConvoSense, Convotherm combi ovens are equipped with capabilities similar to humans. And they deploy them with significantly more precision, endurance and reliability. The sophisticated interaction between sensor technology, intelligence and functionality makes ConvoSense truly unique.

### ConvoSense recognizes, understands and act

Like an eye, a modern optical sensor recognizes the different products. The artificial intelligence involved works on the basis of software and intelligent algorithms much like our brain. It senses, interprets and processes the information – and then decides on the individually, custom-made cooking process developed for the respective foods. Afterwards, the Convotherm combi oven implements this cooking process to perfection. ConvoSense ushers in a new era in cooking and baking.

## The three capabilities required in automated cooking.

Thanks to highly innovative technology and intelligent algorithms, ConvoSense possesses the three fundamental capabilities required for automated cooking and baking:

### 1 Recognize

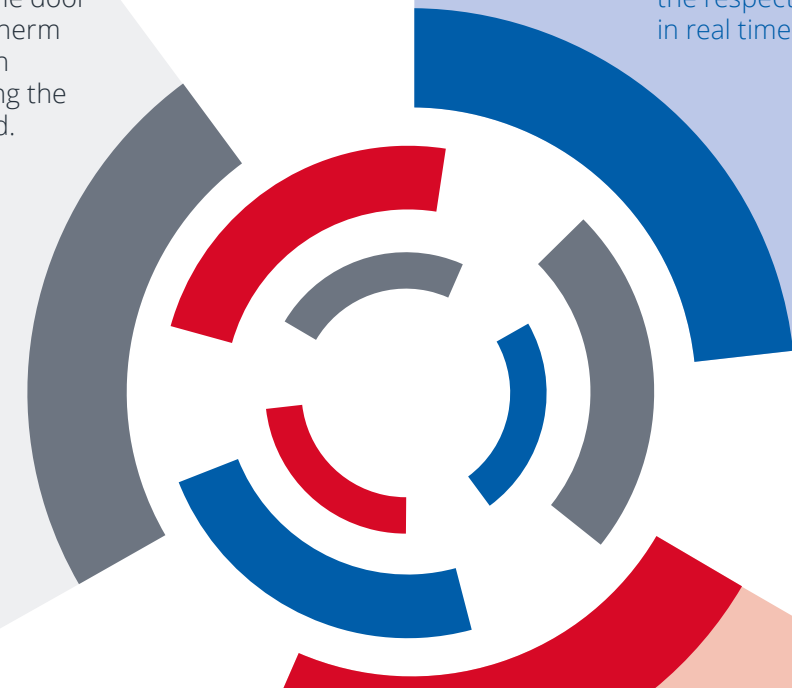
A compact, highly sensitive optical sensor above the door opening in the Convotherm combi oven scans each individual load including the level while it is inserted.

### 2 Understand

The artificial intelligence of ConvoSense is trained individually for the customer-specific products and is therefore able to identify the respective load, shelf by shelf, in real time.

### 3 Act

As an active assistance system, ConvoSense automatically undertakes all of the necessary work steps: It chooses the appropriate cooking program for the load and, if necessary, warns of inadmissible mixed loads immediately.



# The intelligent assistant during cooking and baking.

Convotherm combi ovens with ConvoSense prove themselves highly useful in many respects in the strenuous workday world and offer a number of advantages and exciting features.

## Your advantages at a glance:

### ✔ Less routine work, more freedom

Using its artificial intelligence, ConvoSense lightens the day-to-day work load in many ways. The result: More relaxed and healthier staff who are better able to focus on what really matters: your customers.

### ✔ Process reliability like never before

ConvoSense undergoes customer-specific training for the respective product range. Together with optical product recognition and automatic program control, ConvoSense ensures a new dimension in process reliability as well as top cooking results consistently.

### ✔ Automation saves time and money

ConvoSense takes over many routines automatically. This eliminates time consuming training for frequently changing personnel. Moreover, the system accelerates workflows significantly, particularly at peak times. Time savings that pay off.

### ✔ Efficiency thanks to artificial intelligence

Experience has shown: Even simple, icon-driven controls still entail the potential for errors on the part of unskilled personnel. ConvoSense ensures accuracy. The system reliably safeguards the desired, customer-specific result and effectively avoids poor quality products and waste.

### ✔ Conserves resources through optimized consumption

The algorithms intelligence in ConvoSense the perfect cooking program with the ideal level of energy and water consumption. That pays off not only economically, but also for the environment.

## Hard facts for strenuous everyday routines:

Robust, reliable and flexible: Equipped with ConvoSense, Convotherm combi ovens assist you in your work even better, day in and day out.



### ▶ Small and unobtrusive

The compact optical sensor module is only visible when the door is open. It is compatible with all accessories such as hoods and stacking kits.

### ▶ Robust and heat-resistant

State-of-the-art cooling technology ensures ideal and consistent operating conditions for the sensor module at all times.

### ▶ Smart Energy

Up to operating temperature in no time with programmed preheating followed by standby mode.



### ▶ Ideal for cooking and baking

The software and algorithm are universally compatible with gastronomy products and baked goods.



# Automated cooking and baking: ConvoSense opens up a world of possibilities.

Convotherm combi ovens with the ConvoSense assistance system offer a comprehensive and persuasive range of performance that leads the way into the future of cooking and baking already today.

## 1 Recognize



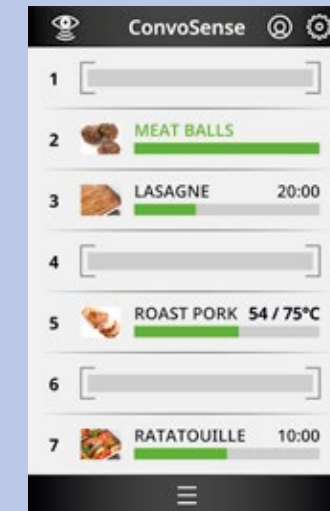
- ▶ **Optimal recognition accuracy**  
The integrated LED light strip ensures a high level of recognition accuracy at all times thanks to its uniform illumination.
- ▶ **High-precision camera and height sensors**
- ▶ **High-performance sensor technology, intelligence and robust functionality**



- ▶ **Precision product recognition**  
ConvoSense recognizes a vast array of different customer-specific foods with a high degree of reliability after a learning phase.

- ▶ **Flexible mixed loads**  
Foods or baked goods – with mixed loads, different products on the individual shelves are recognized with precision.
- ▶ **Exact shelf recognition**  
When a single product type is loaded, ConvoSense recognizes the quantity and location of the selected shelves with precision.

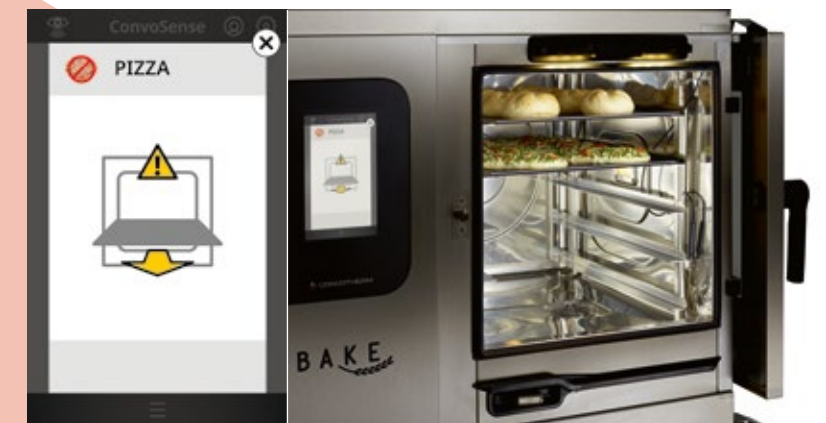
## 2 Understand



- ▶ **Time compensation**  
Depending on the quantity of the load, ConvoSense computes and compensates the cooking times.
- ▶ **Always the right cooking profile**  
Whether a uniform or mixed load, ConvoSense automatically selects the appropriate cooking profile.

## 3 Act

- ▶ **Automatic start**  
The different foods in a mixed load are automatically checked to ensure a suitable combination and the corresponding cooking profiles are then started.



- ▶ **Immediate notification of conflicts**  
If the mix of a load is unsuitable, ConvoSense issues a warning before the door is even closed. A correction can be made at once.



Products manufactured by Convotherm are protected by one or more of the following patents, utility models or designs/design patents:  
EP2638325B1, US10154749, EP 26779909B1, CN104508383B, EP2813764B1, US9538880.