

**FESSMANN**

ECO.LINE



PRODUCTIVITY AND  
OPTIMUM TASTE FOR  
THE TRADE.

## High-tech with a tradition

For nearly 100 years, FESSMANN has been standing for cutting-edge high-tech systems for the treatment of food-stuffs in the meat and fish processing industry.

FESSMANN was founded in Winnenden near Stuttgart in 1924. Today, the company is represented in more than 50 countries on all continents of the world. So far, FESSMANN has already supplied over 80,000 systems for smoking, cooking, roasting, baking and cooling. The trust that our customers place in our process engineering is what keeps us going. There is a reason that FESSMANN is an international leader in quality and service.

Each day we strive to improve even further – not only the flavour aspect but also ecologically and economically. This is how we make the environment, you and your customers happy: Our passion for quality goes beyond mere taste. It also improves your margins. How? Find out on the following pages.







## Dates and facts

- 1924** Company founded by Wilhelm Fessmann
- 1969** Delivery of the first TURBOMAT universal system
- 1971** Development of TF3000, the first semi-continuous system
- 1972** Development of the first transfer system
- 1976** FESSMANN Technical School opens
- 1982** Development of the first RATIO smoke generator
- 1993** The patented RATIO-TOP smouldering smoke generator completes the RATIO line
- 1998** FESSMANN develops equipment for cooking and baking: AUTOVENT and RotathermCARAT
- 2004** FESSMANN introduces a real all-rounder: the Ti3000 industrial system
- 2008** A development success for FESSMANN: the with Triplex insulation, CIP cleaning and frequency converter
- 2010** The new control and the new RATIO-STEAM steam smoke generator are introduced
- 2013** The process monitoring software **FOOD.LOG** developed by FESSMANN is introduced
- 2015** The RATIO-HYBRID: Two smoking processes in a single system
- 2016** The F.LOADER enables fully automatic loading and unloading of the TF4000
- 2019** The new control generation **FOOD.CON2** gets a universal OPC-UA interface
- 2021** The exhaust gas cleaning system **ECO.CLEANAIR** sets new standards for sustainable exhaust air cleaning
- 2022** The digitization of the machines creates transparency in the process and safety in production





## FESSMANN systems offer more

### **Even shape, flavour and quality**

Good sausage is characterised by a unique taste experience. This highest demand to quality can only be met with outstanding technology and a sophisticated concept. We want to supply our customers with the best facilities for this. Therefore, we develop and improve our machines continually. This is what our customers value about FESSMANN. We make certain that an even shape, flavour and colour make your sausage successful.

### **Minimal loss of weight – maximum efficiency**

The minimal weight loss in smoking, cooking, roasting and baking processes maximises cost-effectiveness when FESSMANN technology is used. Optimum insulation and fast process times also ensure a high level of energy efficiency. The durability of our machines provides even more benefits – we only use top-grade components which are processed under the most stringent quality requirements.

### **Innovation and pioneering spirit**

We love racking our brains for ideas that optimise your processes. For this purpose, FESSMANN has its own research and development department. This is where we pour our passion into innovations such as the especially environmentally friendly **ECO.LINE** smoking system. With our pioneering spirit, we have set global standards that are reflected in a number of patented detailed technical solutions. Despite our achievements, we still strive to improve further so that we can continue to offer you products that save you costs and resources.

### **Service and experience**

Your purchase is a commitment for life. When you choose FESSMANN, you will always have a competent partner at your side. You can rely on our experience. Right from the start, we support you in planning and adapting the right solution to your needs. You will, however, rarely see our customer service personnel. This is not due to their lack of time for you but rather owed to the fact that our systems are very fail-proof and extremely low-maintenance.

### **Flexibility and safety**

You would like to change your product portfolio? Not a problem with FESSMANN. The modular design of our systems allows them to be expanded flexibly according to your needs at any time. With our intelligent **FOOD.CO<sub>2</sub>** control system, you can easily manage your FESSMANN equipment around the clock. Even when it's not crunch time.

## Patented smoker solutions

Patented smoke generators are our strength. The sophisticated smoking system achieves optimal results in a very short time. The adjustable smoke intensity levels allow for a variety of smoke flavourings and colour nuances. Thanks to the **FOOD.CO<sub>2</sub>** control system, this consistently high product quality can be reproduced both in colour and in flavour.

Depending on your requirements, you can choose between smouldering smoke generators (RATIO-TOP), friction smoke generators (RATIO-FRICTION) and liquid smoke generators (RATIO-LIQUID).



## Technical data

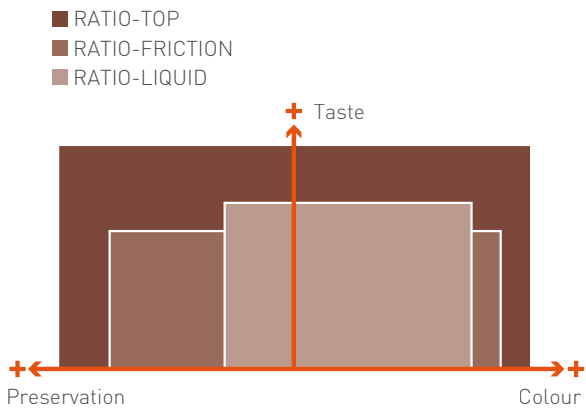
SMOKE GENERATOR	RZ325	RR325	FR325
T1800	x	x	x
T1900	x	x	x
T3000 1-2 trolleys	x	x	x



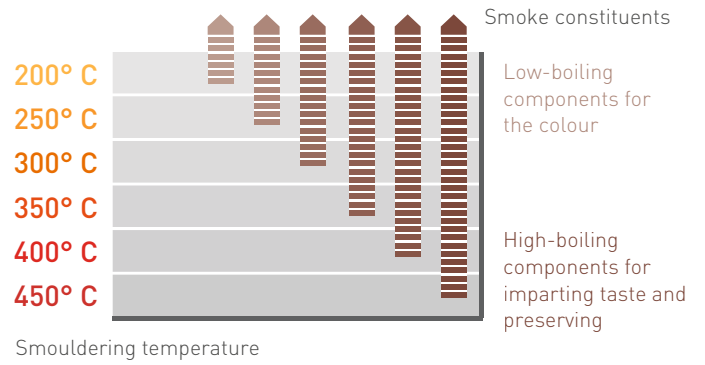
“Good flavour is the most important thing for us. Especially if we can achieve it with less weight lost and even lower consumption.”



## Scope of application

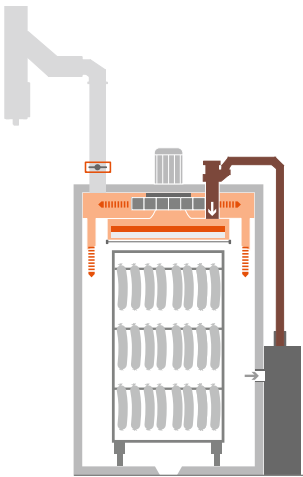


## Smoke development



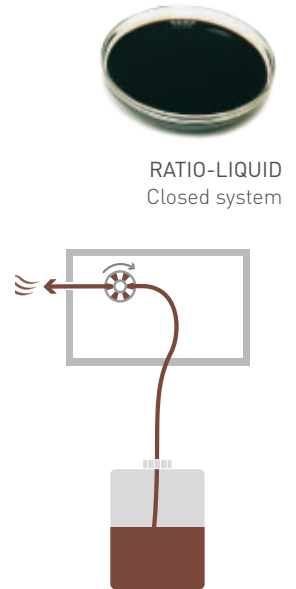
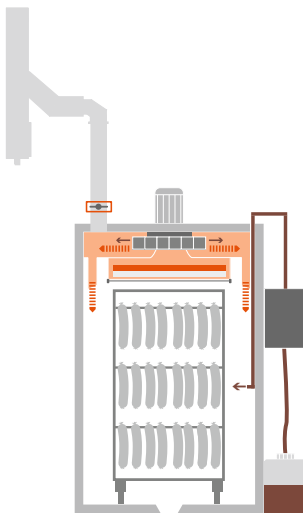
## RATIO-FRICTION Friction smoke generator

- Mild smoke aroma
- Adjustable smoke intensity levels thanks to smoke interval control
- Automatic cleaning device
- Cost-effective smoking material, beech wood beams, grade II 80 × 80 × 800 mm
- Low consumption
- Low noise
- Friction wheel with unrivalled service life
- Motor with lower power consumption than conventional systems
- Includes a magazine for spare beams



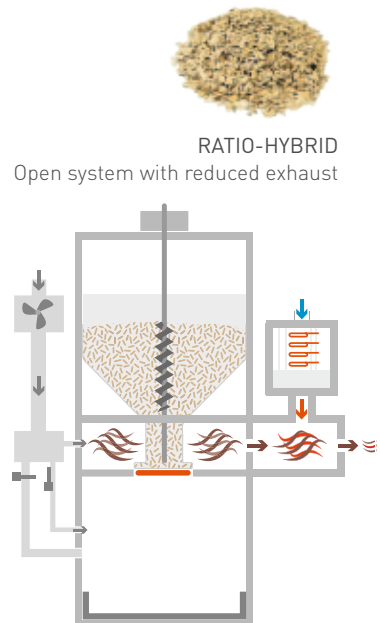
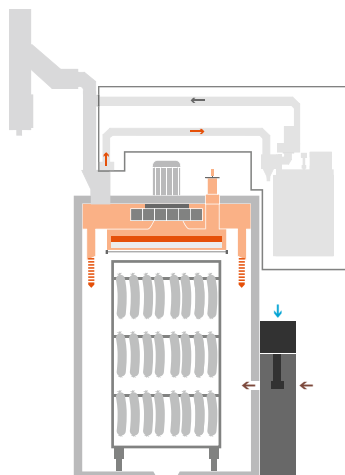
## RATIO-LIQUID Liquid smoke generator

- Low acquisition costs
- Highest product quality: Finest dispensing by a two-substance nozzle with frequency-controlled dosagump
- Minimal consumption of liquid smoke concentrate
- FESSMANN system: during smoking, the system works as a hermetically sealed system with full temperature control
- Highest flexibility: Can optionally be used in combination with external devices



## RATIO-HYBRID Steam smoke generator

- Can use smoulder smoke or steam smoke for individual goods programs
- High product quality from careful smoking with steam smoke
- Minimal consumption of woodchips
- Short smoking times
- Simple handling: Reproducible smoke density for smoulder smoke and steam smoke applications
- Low wear as compared to conventional steam smoke generators
- The woodchip grain size is 4-12 mm (KL2/16)

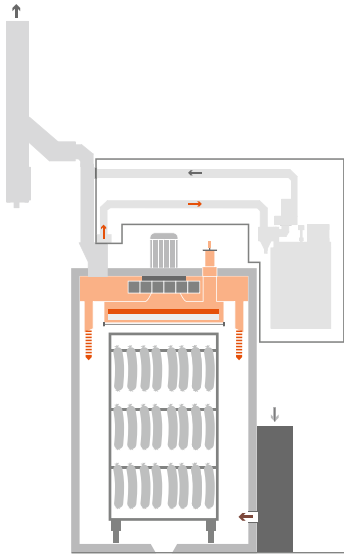




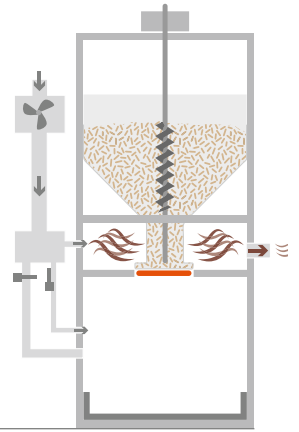
## RATIO-TOP Smouldering smoke generator



RATIO-TOP  
Open system with  
reduced exhaust



- Short smoking times thanks to the rapid generation of maximum smoke concentrations
- Adjustable smoke intensity
- Various smoke flavourings and colour nuances
- TOP selection via **FOOD.CO<sub>2</sub>** control:
  - TOP 1: Light smoke
  - TOP 2: Medium smoke
  - TOP 3: Heavy smoke
- Consistent top-grade product quality in colour and flavour
- Low costs, economical consumption of smoking material
- Grain size of the wood chips ranges from 4 to 12 mm (KL2/16)
- Automatic cleaning device



“The system was adapted to our needs. This is what future-oriented investment means.”





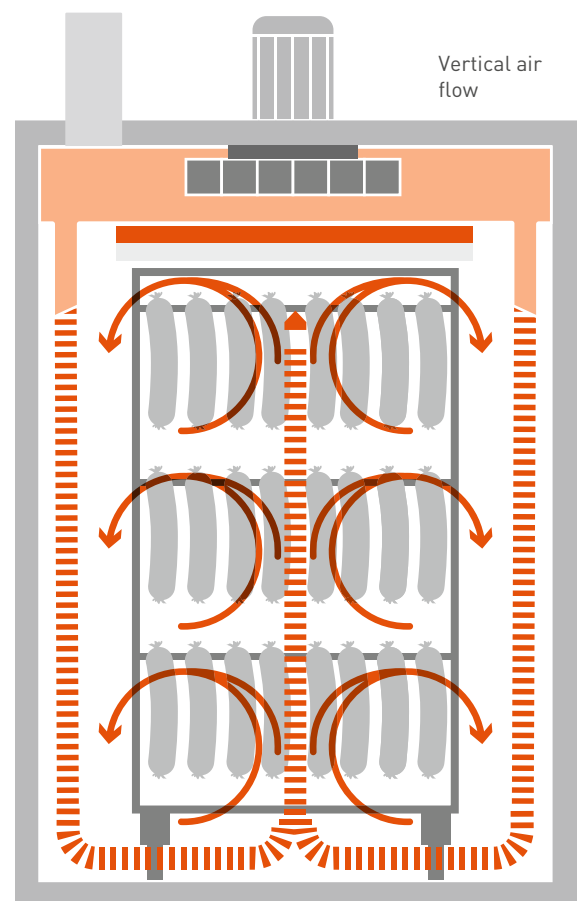
## All benefits at a glance

- Requires minimal floor space thanks to compact design
- Delivered in ready-to-connect state
- Low cleaning effort required thanks to integrated cleaning device
- One step for heating, drying, smoking and scalding
- Low weight loss due to short process times
- Perfect control over operation periods, temperature and humidity with **FOOD.CON<sub>2</sub>**
- Long service life thanks to steam-tight stainless steel construction

## Great taste on minimal space

The compact Turbomat systems T1800 and T1900 are the ideal solution for small and medium-sized businesses. They have a particularly low construction height and need very little space. Despite their incredible holding capacity! Even the installation process is simple: set up, align, connect – done! When it comes to industry technology and producing great tasting products, T1800 and T1900 do not fall short of the performance of the “bigger” FESSMANN systems.

Both Turbomat systems T1800 and T1900 can be equipped with the tried-and-tested smoke generators of the FESSMANN RATIO-family. In one step, the goods are heated, dried, smoked and scalded. The **FOOD.CON<sub>2</sub>** control monitors and regulates temperature and humidity automatically, and the integrated standard cleaning device makes hygiene control a breeze. For you, this means: high quality despite low effort!







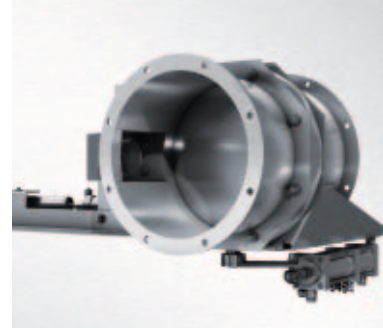
Stainless steel lifting hinge



Unique FESSMANN air flow



Stainless steel door lock



FESSMANN RATIO flap



“The most successful universal system for cooking and smoking for 30 years – with good reason.”



## All benefits at a glance

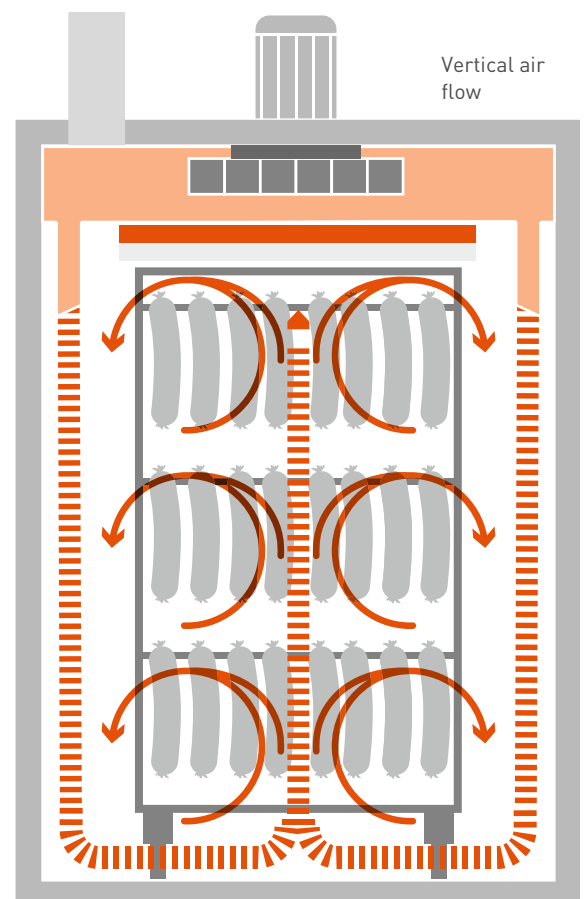
- Made from all stainless steel with low installation height
- Automatic cleaning device as standard feature
- Different means of heating available
- Optional with climate package for optimum maturation
- Stepless recirculating fan for best results and uniform smoking climate in the entire system
- Proven control mechanisms for reproducible results as standard feature
- Modular design for flexible expansion of up to 8 trolleys. Each expansion part includes its own heating and recirculation components for short production times with maximum quality
- Compatible with all smoke generators from the Ratio line

## Quality based on tradition

Modern butcher's businesses face the challenge of having to produce high quantities at a consistently high quality and as low a price as possible. With the FESSMANN Turbomat systems **T2500** and **T3000**, you can achieve both: Quality and productivity.

The proven FESSMANN technology with a stepless recirculating fan ensures an exquisite smoky flavour and accurately reproducible results. Minimal weight loss, fast process times and low maintenance and operating costs make this universal system profitable in no time. The automatic control allows you to manage the system easily with minimal manpower.

The Turbomat convinces by reproducible and consistent results and ensures the process reliability. With our variety of models and features to choose from, the universal system can be suited to your needs perfectly.







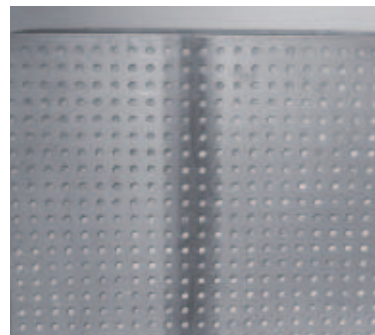
Stainless steel basket insert with flap



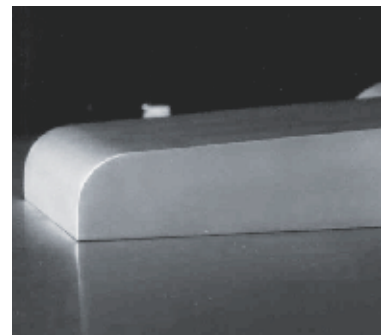
Boiler float gauge



Stainless steel floor insert



Insulated boiler lid





## Nothing boils over – except your excitement for the product

Quality has never been this energy-efficient! Thanks to its unique heat insulation, the **NOVA boiler** not only uses energy very effectively, it also distributes the heat evenly across the entire boiler bottom, which ensures the consistently high quality of all products. For you, this means: increased quality at a lower cost.

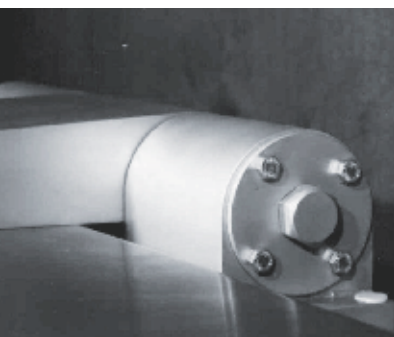
The boiler is available in holding capacities between 300 and 1000 litres. And it uses not only water for boiling! You have the choice between electric, gas, oil (300 l, 400 l, 600 l) and high-pressure steam heat (600 l, 1000 l). Its special hygienic stainless steel design and the dirt-repellent edge make this boiler a true cleanliness miracle.

With the standard DP-K control, you can easily regulate pre-select times, cooking temperatures and treatment periods - your success is guaranteed.

By the way: FESSMANN cooking boiler systems are always equipped with standard inlet valves for hot and cold water and are delivered as prefabricated units. Optionally, the system is also available with the core temperature function.

### Technical data

BOILER		GR1	GR2	GR3	GR4	GR5	GR6	GR7
DIMENSIONS		200/250 L	300 L	400 L	600 L	600 L	800 L	1000 L
Floor space (W x D) outside	cm	90x122	100x122	130x122	130x122	165x122	165x122	200x122
Space inside (W x D x H)	cm	70x80x49	80x80x49	110x80x49	110x80x63	145x88x49	145x88x63	180x88x63
HEIZLEISTUNGEN								
Connection value for HP heat	kW	54	65	85	127	127	170	215
Connection value for ND heat	kW	23	28	38	56	56	75	95
Connection value for EL heat	kW	15,4	17,6	24,2	-	28,6	-	-
Connection value for gas/oil heat	kW	32	34	37	-	43	-	-





Pork pâté loaf



Chicken wings



Crustrated ham



Whole chicken



## All benefits at a glance

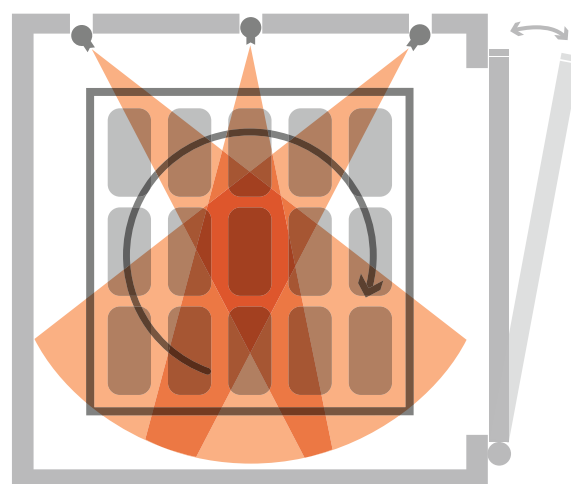
- Optimal baking results thanks to unique rotation technology
- Increases capacities up to 100 %
- Short heating and baking times
- Up to twice the trolley load capacity of standard baking systems
- Lower weight loss than conventional systems (amortisation of investment costs from only the weight loss savings is possible in less than 6 months)
- Less space required
- Energy savings thanks to high-quality insulation
- Optional CIP cleaning to reduce personnel expenditures

## Our secret: Baking at 360 °

The FESSMANN **RotathermCarat** stands for top-class baking results thanks to its special rotation baking technology. This unique system combines the innovative baking trolley rotation with the air flow from three vertical outlets directed at the centre (see image). This makes it suitable for baking, cooking and hot-air refining in batch operation.

Increase your profits and lower your costs with FESSMANN RotathermCarat. Discover the premium quality and maximum capacity yourself.

The innovative technology allows for the development and design of completely new products, such as pâtés or combinations of meat and dough. Produce crunchy surfaces with an artisan flavour but no burn marks. Thanks to Slicerware, loosening the baking crust is no longer a problem. No more wasted goods. The particularly short heating and baking times, the excellent insulation and the long shelf life also save you energy and money. Furthermore, this system not only significantly reduces weight loss but also the floor space needed.



RotathermCarat  
Top view

## Technical data

RotathermCarat <sup>1)</sup>		
DIMENSIONS		
Floor space (W × D)	cm	198 × 187
Body height	cm	251
Minimum room height	cm	335
Recommended room height	cm	-
Baking trolley (H × W × D)	cm	198 × 103 × 104
Baking tray (W × D)	cm	94 × 100
HEATING CAPACITY		
Connection value for EL heat	kW	88
Connection value for gas heat	kW	80
+ additional EL heat	kW	24
Connection value for oil heat	kW	80
+ additional EL heat	kW	24
Connection value for LP heat	kW	45

<sup>1)</sup> This data is merely a summary and must not be used for structural application. Please see the relevant dimension sheets for complete dimensions and power connections. EL = heated electrically, oil = heated with oil, gas = heated with gas, LP = low pressure.

RotathermCarat



50 % less weight loss  
weight loss

Conventional baking system

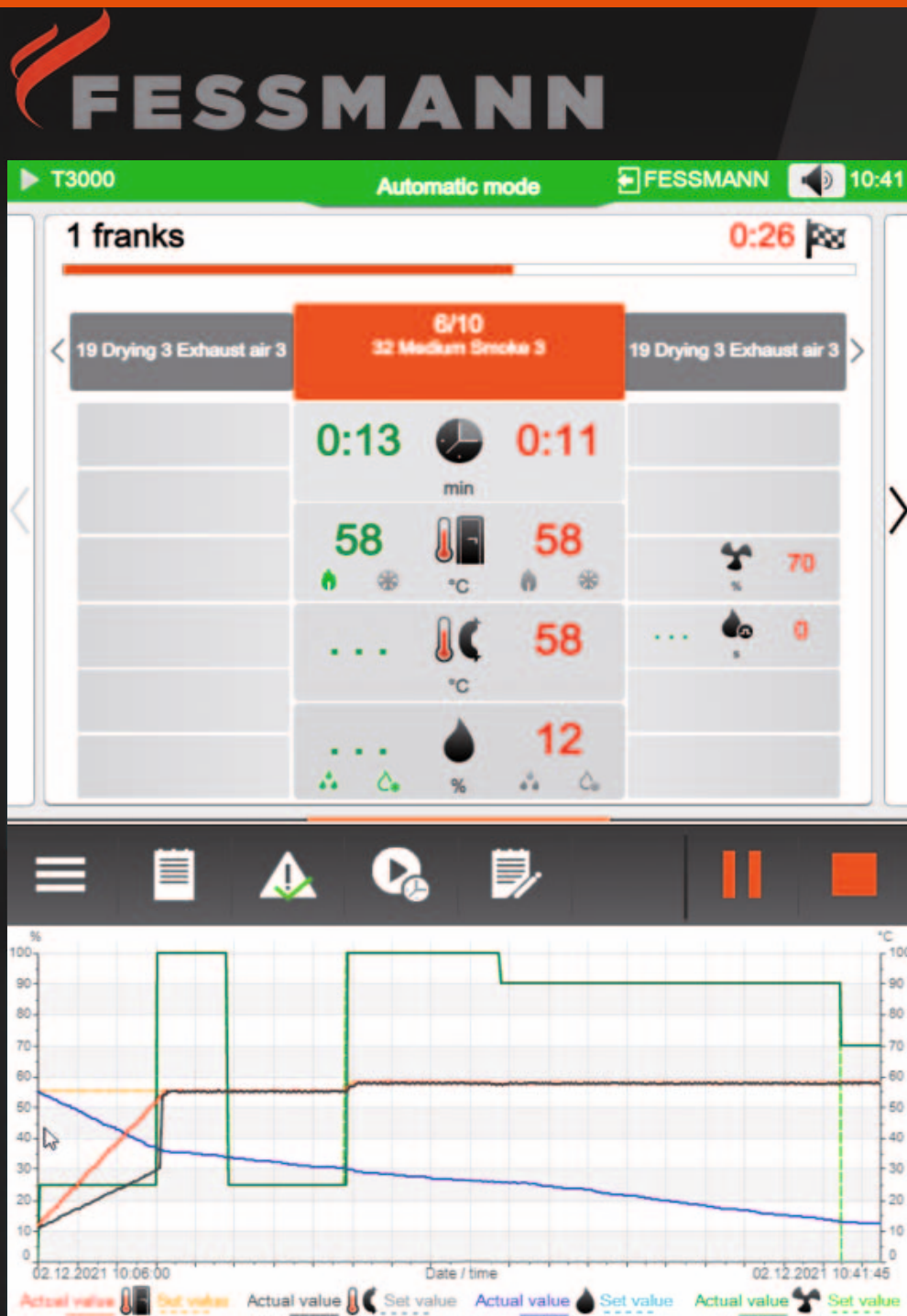


weight loss



## All benefits at a glance

- Easy operability: intuitive, clear and ergonomic programme outline
- Maximum availability and limited downtime thanks to self-diagnostics and fieldbus connection of important components
- Remote maintenance by external access allows service and programme optimisations around the clock
- Always precise and easy to see on the display during ongoing programs: progress of chamber temperature, core temperature, moisture level and more
- Batch input option
- Display on mobile devices possible
- Parallel monitoring and control of up to 4 systems
- Touch screen with special protective glass: easy operation and protection from moisture
- Various levels of password protection safeguard the programmes from unauthorised access



## FOOD.CON<sub>2</sub>

### First of a new generation

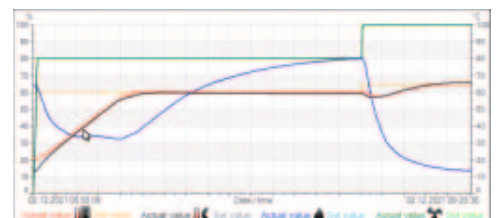
The new **FOOD.CON<sub>2</sub>** control looks good, is easy to handle and keeps quality consistently high.

Producing high-quality products in the meat processing industry means to balance the demand for flexibility in the manufacture of goods and ultimate process reliability. Constant monitoring of all processes and flow of goods without breaks as well as the careful documentation of each interference in the programme sequence are of the utmost importance: It is the only way to prevent mistakes that may lead to more severe downtimes or high costs later. To achieve this, we need software that stays in control even with the high number of processes running at the same time, the multitude of systems and the ever increasing requirements for process control that rise under pressure.

## Being in the know with **FOOD.LOG**

The process monitoring software developed by FESSMANN offers user-friendly, Windows-based control mechanisms to simplify complex production sequences. **FOOD.LOG** gives you a comprehensive overview over all data required for the quality assurance of your products. It is ergonomic and intuitive and saves all relevant data in a database, thus making it easy to monitor multiple systems at the same time.

The right programme for each company. You can choose between **FOOD.LOG** basic, professional and enterprise to meet your individual needs for production monitoring. Perfect easy-to-handle process monitoring – with **FOOD.LOG**, you won't miss a thing. You can document any system and operating condition in a detailed manner. The programme records and saves all process-related data, such as chamber temperature and core temperature, F value, process duration and relative humidity. **FOOD.LOG** allows for accurate production control and verification management according to DIN ISO 9000.



All **FOOD.LOG** features at a glance:

- Process monitoring
- Process documentation
- Verification management
- Batch reporting
- Production optimisation
- Programme maintenance
- Failure management
- System monitoring
- Integration in EN ISO 9000-9004
- Links up to 32 systems, cooling and storage rooms per PC





“We strive to not only preserve the weight of your products, but also your energy.”



## ECO.LINE – An energy-efficient all-rounder

The new TURBOMAT systems by FESSMANN are particularly economical and flexible. Thanks to the advanced panel construction with Triplex insulation, heat loss was reduced by more than 20 percent.

The fully automated Cleaning-in-place system (CIP) ensures environmentally friendly and convenient self-cleaning. The frequency converter, which is a standard feature, allows the speed to be controlled individually and adds to the benefits: Different products can be processed in the same system.

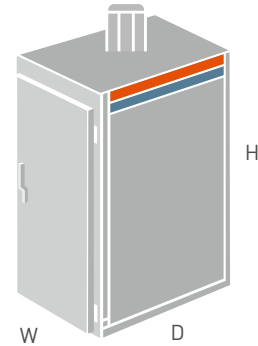
### Our contribution to resource conservation

- All systems feature the unique Triplex insulation: Stainless steel side wall without thermal bridges plus PU foam insulation and additional high temperature insulation plate
- Smart silicone gaskets seal any opening so that energy does not escape through covers or doors
- Energy-efficient engines in all systems according to the latest EU standard (IEC 60034-30)
- Frequency converter for gentle and efficient product treatment
- The environmentally friendly CIP system minimises water and cleaning agent consumption thanks to intelligent control technology
- State-of-the-art control technology optimises the cooling process and reduces energy consumption while still ensuring the same product quality
- FESSMANN Ratio smoke generators need up to 50 % less smoking material with more flexible and intense smoking results.
- The exhaust cleaning system **ECO.CLEANAIR** destroys all harmful flue gas components by its three-step process with minimal use of energie

**TECHNICAL DATA**

T1800 und T1900

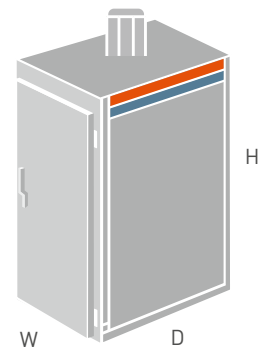
TURBOMAT <sup>1)</sup>		T1800	T1900
DIMENSIONS		1 TROLLEY	1 TROLLEY
Floor space HP heating (W × D)	cm	126 × 109	126 × 109
Height with EL / HP heating, body	cm	195	220
Height with gas / oil heating, body	cm	195	220
Minimum room height EL / HP heating	cm	250	275
Recommended room height EL / HP heating	cm	275	300
Smoke trolley dimensions (H × W × D)	cm	142 × 91 × 80	168 × 91 × 80
Max. stick length	cm	90	90
HEATING CAPACITY			
Connection value for HP heat	kW	34	34
Connection value for EL heat	kW	22,5	22,5
Connection value for gas heat	kW	25	25



<sup>1)</sup> This data is merely a summary and must not be used for structural application.  
 Please see the relevant dimension sheets for complete dimensions and power connections.  
 HP = heated with high pressure, EL = heated electrically, oil = heated with oil, gas = heated with gas

T2500 und T3000

TURBOMAT <sup>1)</sup>		T2500	T3000
DIMENSIONS		1 TROLLEY	1 TROLLEY
Floor space HP heating (W × D)	cm	151 × 136	151 × 136
Height with EL / HP heating, body	cm	220	250
Height with gas / oil heating, body	cm	220	265
Minimum room height EL / HP heating	cm	303	333
Recommended room height EL / HP heating	cm	310	340
Smoke trolley dimensions (H × W × D)	cm	168 × 104 × 102	198 × 104 × 102
Max. stick length	cm	100	100
HEATING CAPACITY			
Connection value for HP heat	kW	34	34
Connection value for EL heat	kW	28,35	28,35
Connection value for gas heat	kW	37	37



<sup>1)</sup> This data is merely a summary and must not be used for structural application.  
 Please see the relevant dimension sheets for complete dimensions and power connections.  
 HP = heated with high pressure, EL = heated electrically, oil = heated with oil, gas = heated with gas



“I am confident that the formulation and convincing technology along with the high reliability are key success factors for good sausage.”

Uli Fessmann

## All benefits of FESSMANN at a glance

- Smoke density can be controlled for individual and uniform taste
- Patented smoking system achieves consistent quality in the entire batch
- Very cost-effective due to minimal weight loss and perfect uniformity
- Reproducible results thanks to **FOOD.CO<sub>2</sub>** control by FESSMANN
- Accurate production control and verification management thanks to **FOOD.LOG** process monitoring software by FESSMANN
- Smoke generators individually adjusted to meet your requirements
- Long-lived thanks to highest-quality materials and best processing
- Energy-efficient thanks to optimal insulation
- Future-proof: Heating optionally either with electricity, high-pressure steam, gas, thermal oil or oil
- Efficient exhaust cleaning by the thermos-catalytic afterburner **ECO.CLEANAIR**



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Subject to technical modifications, system photos may deviate from standard, version 02/2022