

# Energy Saving Services

FESTO





You count on expert knowledge.  
You expect a differentiated range of services.  
We give you an edge.

→ **WE ARE THE ENGINEERS  
OF PRODUCTIVITY.**

#### **Shaping the future – through targeted action**

High energy prices, rising cost pressure and a growing awareness of climate protection have turned energy efficiency into a key business task. The Festo Energy Saving Services offer compressed air users a customised range of services for identifying and optimally exploiting potential compressed air savings – systematically and sustainably.

#### **The benefits for you:**

##### **Increased production capacity**

- Prevention of unplanned production downtime
- A more stable production process
- Fewer rejects thanks to constant production quality
- Maintenance of an optimised machine status

##### **Falling energy costs**

- More efficient compressed air generation
- Reduced compressed air consumption
- Avoidance of pressure drops

For more information

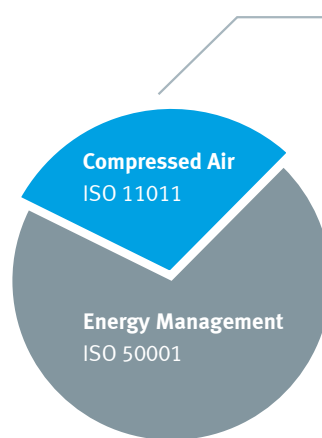
→ [www.festo.com/energysaving](http://www.festo.com/energysaving)

## Tailored to your needs: energy efficiency as a modular service

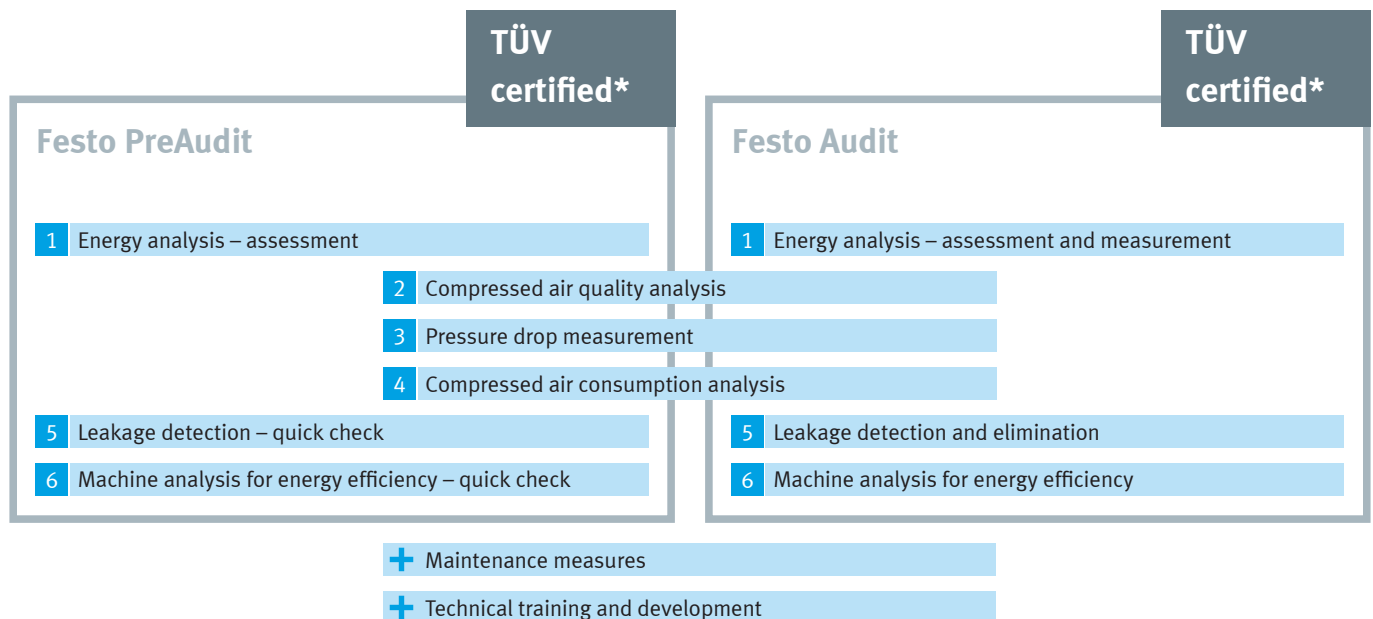
The Festo Energy Saving Services have a modular design so they can precisely meet your specific requirements. You choose whether you want to take advantage of the PreAudit, just the individual service modules or the full Audit. You define the objectives and we adapt the range of services to meet them.

Our unique service offerings range from recording and analysing the status of compressors and machines, developing action plans and professionally servicing pneumatic components right

up to maintaining an optimised machine status. We additionally offer training courses to safeguard and expand the knowledge you acquire.



The savings potential when using compressed air in automation is enormous. For maximum transparency and comparability of the results, the individual Festo Energy Saving Services are certified to ISO 11011.



PreAudit and Audit at a glance: even the PreAudit can reveal big savings potential. The Audit is recommended for tailored energy efficiency. Specific maintenance measures and training events complete the Festo Energy Saving Services.

\* The services are certified by the German technical services organisation TÜV SÜD in accordance with ISO 11011.

# PreAudit

The PreAudit provides important tips and recommendations on what you can do to improve energy efficiency. At the end of the PreAudit you receive a comprehensive report containing an analysis of the current situation in your entire compressed air system and a list of weighted recommendations. This will allow you to identify immediately the areas where making a quick start with measures aimed at improving energy efficiency will have the biggest effect.



## The process

First our experts assess and analyse the compressed air generation and preparation system. The focus here is on possible weak points that can be optimised. Determining the compressed air consumption, measuring the pressure drop and analysing the compressed air quality provide further indicators for potential improvements.

Next comes the quick check, during which our experts locate leaks by way of example and perform a machine analysis focusing on energy efficiency. All of these steps produce a detailed picture of your production system's energy consumption.

**“I was very pleasantly surprised at the amount of information we got from the Festo team after such a short time. The PreAudit report is clear and precise. The potential savings you found are worth taking a look at – you made very efficient use of your time with us!”**

Dušan Kozica, Technical Department at IKEA Industry Poruba, Slovakia



# The service modules

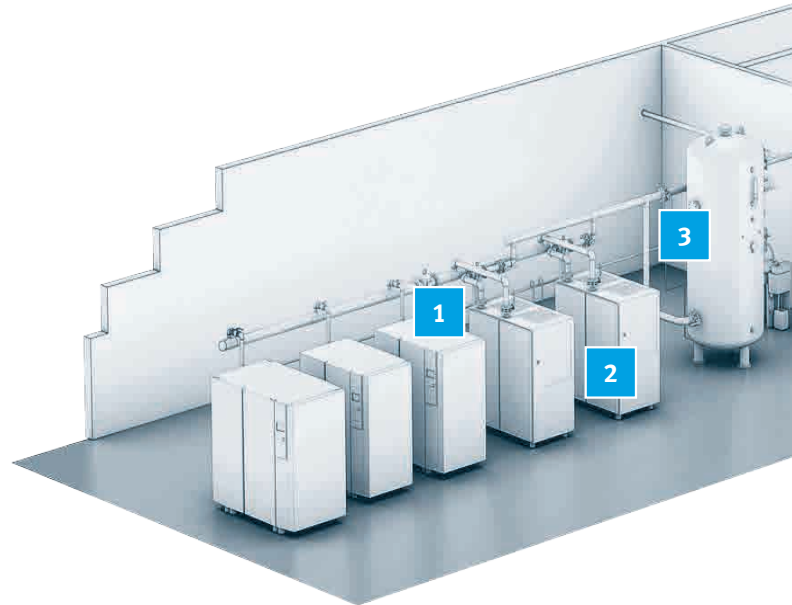
## 1 Energy analysis of compressed air generation



Monitoring the compressed air generation over several days, including downtimes and the weekend, produces a clear consumption profile. It documents the power and compressed air requirements including fluctuations in consumption from basic load to peak load at different times of operation. The savings potential is then outlined in a report.

### The benefits for you

- Manufacturer-independent measurement
- Measurement during operation
- Transparent energy consumption of the entire system
- Awareness of the system's output reserves



## 2 Compressed air quality analysis



Oil, water or particles in compressed air have a negative effect on the service life of pneumatic components. Energy and operating costs rise, and in worst-case scenarios can lead to unexpected production downtime. Centralised and decentralised measurement of the compressed air quality includes inspecting the service units, measuring the water and oil content, air temperature and pressure as well as determining the pressure dew point.

### The benefits for you

- Assurance of optimum compressed air quality
- Increased service life of pneumatic components
- Minimisation of unexpected production downtimes
- Targeted adaptation of compressed air preparation to requirements

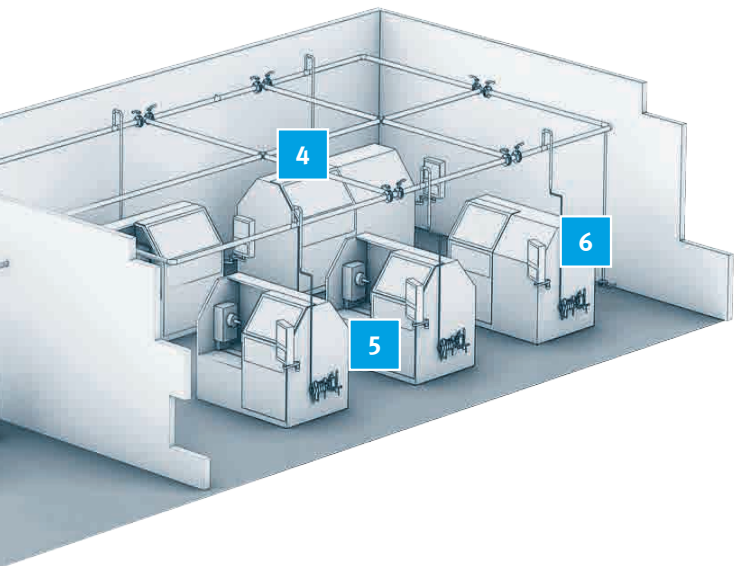
## 3 Pressure drop measurement



### The benefits for you

- Lower costs through pressure reductions
- Process reliability thanks to constant pressure level

The pressure drop in the system can be recorded using several pressure sensors with data loggers installed in different places in the compressed air system. By reducing the pressure, energy savings of up to 8% for pressure generation can be achieved.



#### 4 Compressed air consumption analysis



When measuring the precise compressed air consumption at the individual machines at rest and during operation, our team analyses various parameters such as consumption per machine cycle, average consumption per minute, average pressure, maximum/minimum pressure and maximum/minimum air volume flow. These measurement results are documented in a report.

##### The benefits for you

- Determination of the actual compressed air consumption of individual machines
- No unwanted pressure drop due to undersupply
- No unnecessary energy consumption due to oversupply
- Compressed air losses due to leakage are determined
- Compressed air supply to the machine can be optimally configured

#### 5 Leakage detection and elimination



Systematically identifying leaks in compressed air systems and professionally eliminating them considerably reduces compressed air costs, because leaky compressed air components waste lots of energy and money. Our specialists check the entire compressed air system – from the compressor to the pneumatic application.

##### The benefits for you

- No production downtime required
- Transparency of energy and money losses as well as CO<sub>2</sub> emissions
- Leakage detection using ultrasound detectors
- Assessment and classification of the individual leaks
- Detailed list of required repair measures, including replacement parts
- Online access to the prepared data via the Energy Saving Assessment Portal

#### 6 Machine analysis for energy efficiency



Stabilise your processes and reduce your costs by strategically designing your compressed air system for the future. Based on the analysis, our experts define recommendations for how you can realise possible energy optimisation potential in compressed air applications. This includes an estimate of the costs and savings, as well as the predicted amortisation time.

##### The benefits for you

- Systematic review of the system's pneumatic energy efficiency
- Rapid identification of measures that are economically sensible and technically feasible
- Documentation of the analysed compressed air applications
- On request: installing and commissioning the developed solutions

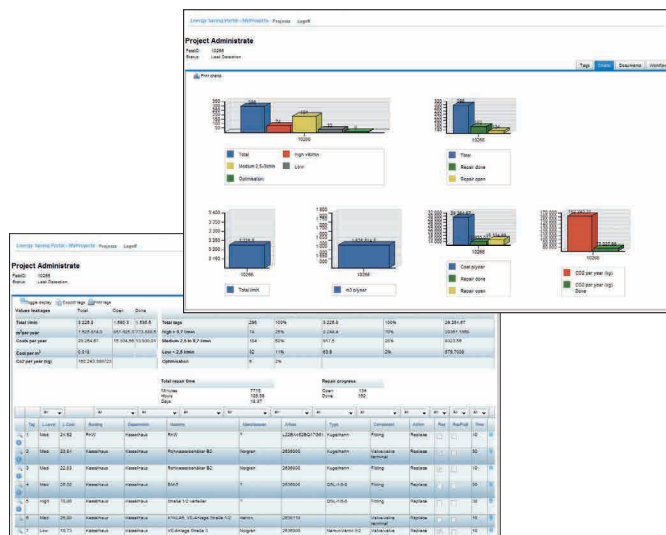
### Transparency as a priority: the Energy Saving Assessment Portal

Thanks to the online portal, you always have all the information at your fingertips. The Energy Saving Assessment Portal provides all results of the services performed and recorded repair data. You get your own access so that you can view your data at any time –

wherever you are and in real-time. A report is available to all authorised employees, regardless of their location. And you can edit the data yourself, e.g. if your employees have eliminated leaks.

You can access the Energy Saving Assessment Portal here:

→ [www.festo.com/energysaving](http://www.festo.com/energysaving)



## + Maintenance

New leaks and wear on components can never be completely excluded. Therefore, to gain long-term benefit from the cost and energy savings achieved, steps must be taken at regular intervals to maintain the optimised condition of the machines:

- Regular analysis of compressed air generation, consumption and quality
- Regular leakage detection and elimination

- Regular inspections, corrective and preventative maintenance
- Condition monitoring system

Condition monitoring and diagnostic systems help to detect wear and changes in pressures and flow rates early. This makes it easier to plan maintenance and avoid imminent production downtimes. If downtime still occurs, the cause of the fault

can be quickly identified. On request, Festo specialists will develop an individually designed condition monitoring solution for your system and help you implement it.

### The benefits to you

- The entire compressed air system is always in a good condition
- Long-term savings on energy and costs
- High system availability and prevention of unplanned downtimes
- High process reliability and transparency
- Constant production quality

## + Technical training and development

### Saving energy in pneumatic systems. How does it work?

This training course offered by Festo Didactic covers innovative improvements regarding energy savings in basic pneumatic applications.

It deals with the topics of compressed air generation, distribution, preparation and use. By the end of the course, participants will be able to determine potential improvements in their working environment. The training course is designed specifically for the needs of customers that have

already taken advantage of the Festo Energy Saving Services. Simply ask your contact person at Festo. Or go online to find further information, dates and event locations:

→ [www.festo-didactic.com](http://www.festo-didactic.com)

## What our customers say

**At Tate & Lyle, a global manufacturer of raw materials for food production, the experts from Festo have been able to fix leaks which were causing compressed air losses of 6,000 litres per minute.**

Tate & Lyle's 30 production locations convert all kinds of raw materials into high-quality ingredients such as glucose syrup. The company faces high levels of global competitive pressure.

Dutch maintenance manager Remo Dubbeld therefore decided to test all the company's compressed air systems. "We have our own energy saving programme, which has now been perfected thanks to the Festo Energy Saving Services", says Dubbeld.

**Customer: Tate & Lyle, Koog aan de Zaan, Netherlands**

Worldwide manufacturer of ingredients and solutions for the food and beverage industries and other industry sectors

### **Focus on leakage detection**

"Festo checked our systems and discovered lots of leaks", explains Dubbeld. "All in all we were losing 6,000 litres per minute, which represents roughly 8% of our compressed air costs." Based on a typical market price for compressed air of €0.019 per cubic metre, this amounts to savings of about €75,000 a year.

### **Group-wide energy savings planned**

This tremendous success in the Netherlands aroused interest at other Tate & Lyle locations. "I told colleagues at other plants about the Festo Energy Saving Services. We're now planning to implement these measures in our other European plants as well", says Dubbeld.

**"We're very satisfied with Festo and its Energy Saving Services. They enabled us to reduce our compressed air consumption by about 8%."**

Remo Dubbeld, Maintenance Manager at Tate & Lyle, Netherlands



Leakage detection in the plant in Koog aan de Zaan. The detected leaks represent about 8% of total compressed air costs.

### **Maximum productivity is a matter of ambition**

Do you share this attitude? We would be happy to help you achieve this goal – through our four outstanding qualities:

- Security • Efficiency • Simplicity • Competency

We are the engineers of productivity.

Discover new dimensions for your company:

→ [www.festo.com/whfesto](http://www.festo.com/whfesto)