

**KERR** | Compressor  
Engineers

Compressors • Vacuum Pumps • Blowers

# Analysis and Advice



# ADA – KESS

## Significant savings

KAESER's Air Demand Analysis (ADA) and the KAESER Energy Saving System (KESS) are advanced, proprietary tools that provide the basis for outstanding compressed air supply efficiency and dependability. The measurement and evaluation methods used comply with the requirements as per ISO 11011, a standard which establishes rules, methodologies and responsibilities to enable comparability between energy audits in order to achieve enhanced compressed air system efficiency.

### Individual solutions, maximum efficiency

The first stage when planning any compressed air system is to determine the actual air demand in order to meet your compressed air demands as efficiently as possible. Meticulous demand analysis, planning, implementation and expert advice all lead to significant savings in the long-run. This particularly applies to compressed air systems in workshop and industrial applications.

Reliable AND efficient air system operation is achieved only through application-specific advice offered by an experienced compressed air systems provider.

KAESER KOMPRESSOREN has therefore developed highly effective tools for planning of new compressed air supply systems and optimisation of existing ones: With information gathered from carrying out a detailed air demand analysis (ADA) and using the specially developed KAESER Energy Saving System (KESS), KAESER's project engineers are able to provide individually tailored

compressed air system solutions. Decades of experience in compressed air technology development and system design ensure optimum compressed air production, treatment and energy efficiency. The results: reduced energy costs and considerable environmental benefits.

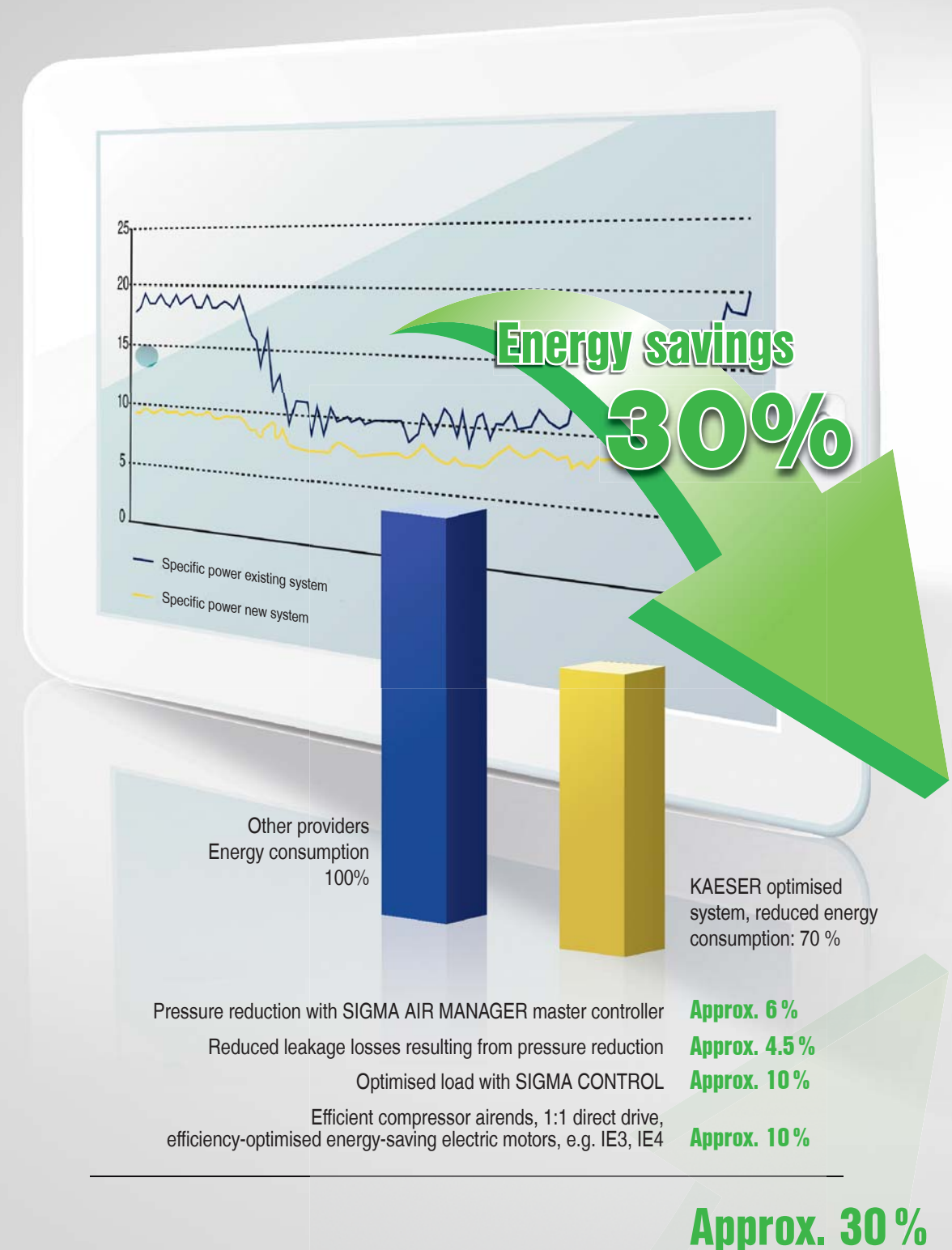
### Save energy and money with ADA and KESS

Compressed air is one of the most versatile sources of energy available for today's production and service industries. Using ADA and KESS, KAESER's experts are able to plan and design a system that is specially tailored to meet all of your compressed air requirements and which will keep your air costs to an absolute minimum.



ADA measuring device

## Significantly reduce energy costs with KAESER

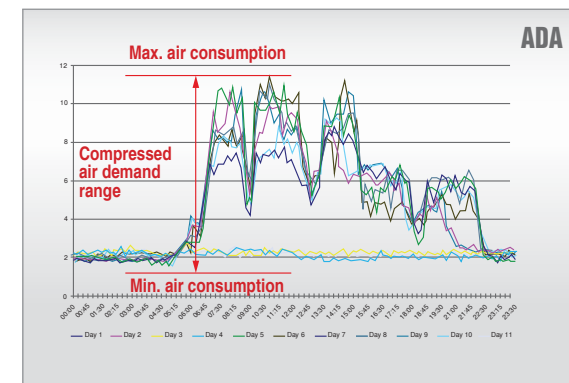






# The path...

## ...to an energy-saving compressed air station



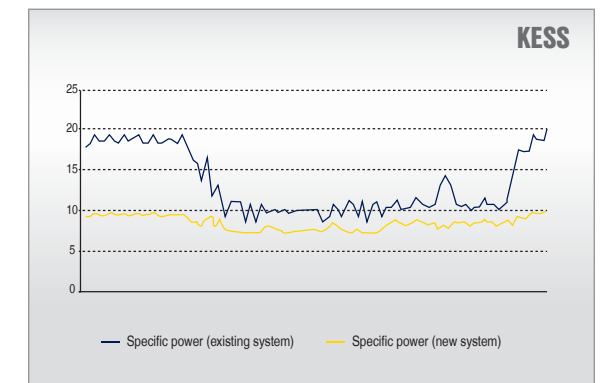
### Air Demand Analysis

The computer-aided "Air Demand Analysis" (ADA) allows meaningful and accurate data to be gathered regarding compressed air system performance. Based on the resulting air consumption profiles, KAESER's Energy Saving System (KES) can then help determine the best system solution for the individual air application.



### A solution that meets your individual needs

With the ADA air demand profile and the KESS evaluation in mind, KAESER's engineers decide on the type and layout of the compressed air system on a case-by-case basis. Let KAESER design a compressed air system that is individually suited to meet your exact compressed air needs.



### KAESER Energy Saving System

KES processes the data acquired by ADA so that a state-of-the-art compressed air system can be designed and individually tailored to meet the customer's compressed air needs. An efficiency comparison between the various system options determines the most suitable system for each specific application.



### Reduce energy costs

Electrical power can account for up to 90% of the total costs for compressed air production. Nevertheless, many compressed air systems hide a significant energy savings potential of 30 percent or more. These savings can be realised through optimised interplay between the compressor engineering technology and advanced, PC-based control systems.



# ADA + KESS = Systematic cost reduction

## ADA and KESS in detail

When the air demand and operating conditions are known, the design stage can begin: All relevant parameters including required pressure, delivery volume, air quality, system performance and energy consumption are taken into consideration when designing the new system.

Whatever your compressed air application, you can be certain that KAESER's highly experienced project engineers will deliver a system that operates with maximum efficiency and which meets all of your specific compressed air needs. Unrivalled expertise, combined with a detailed knowledge of KAESER's range of compressed air products, enables KAESER's experts to take advantage of every possible way to keep energy consumption costs to an absolute minimum.

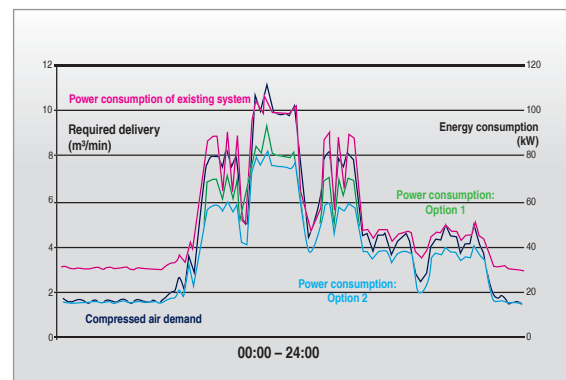
## 01 Actual compressed air demand

The first stage when planning any compressed air system is to determine the actual air demand. KAESER's experts gain a detailed insight into compressed air usage by carrying out a comprehensive air demand analysis (ADA).



## 02 Check power consumption

Precise data show the actual power consumption and energy-efficiency of each simulated system. This information forms the basis for the next step toward achieving an energy-optimised compressed air system.



## 03 Comparing specific power requirement

Only when the actual power consumption is compared with the volume of air delivered can the specific power requirement be calculated. This information then provides a true picture of the various systems' energy efficiency.

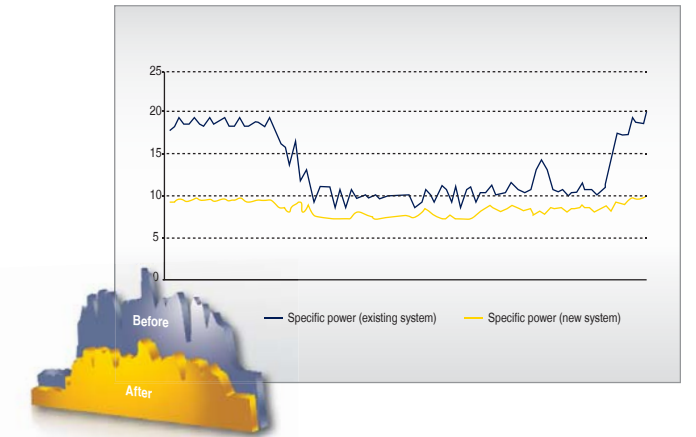






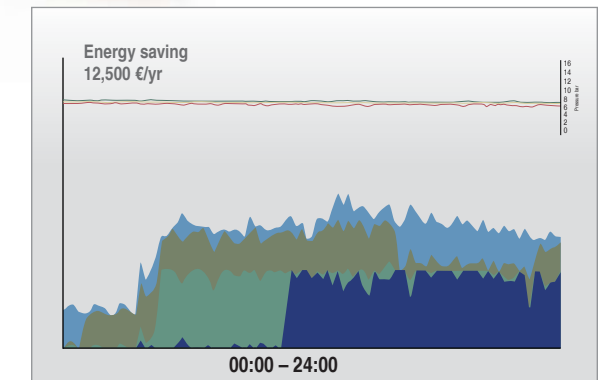
## 04 Determining the optimum solution

The data gathered from the ADA is analysed using the KAESER Energy Saving System (KESS). This advanced software developed by KAESER KOMPRESSOREN doesn't simply come up with one solution, but offers the most efficient and economical one from several possibilities.



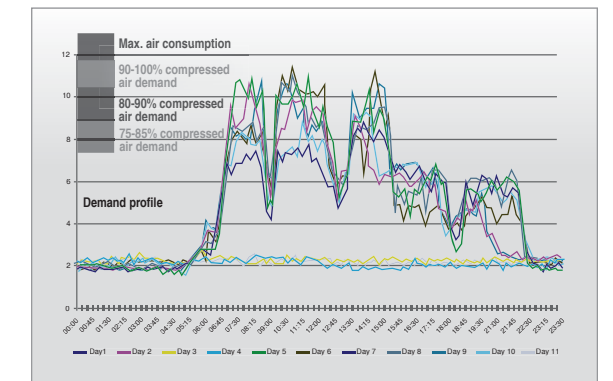
## 05 Realistic energy savings

KAESER's ADA and KESS analysis / evaluation tools provide a realistic forecast of the energy savings that can be expected from a proposed compressed air system.



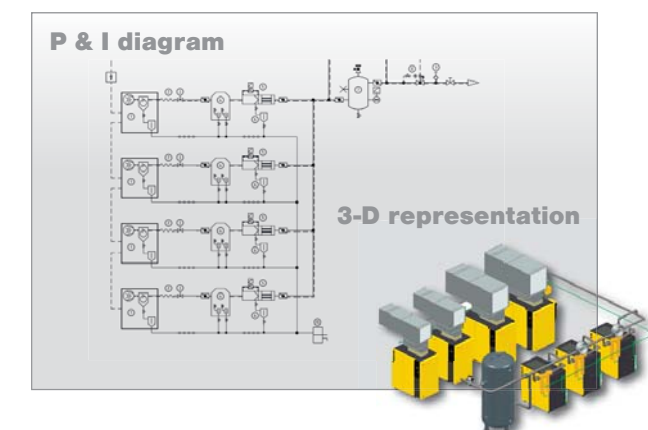
## 06 Individual dependability concept

An effective compressed air system should provide maximum availability at all times. It goes without saying therefore, that KAESER engineers always pay particular attention to ensure that every compressed air system is designed to deliver outstanding dependability and performance.



## 07 CAD planning

The actual installation environment can be recreated down to the smallest detail using advanced CAD technology to allow the customer to take a virtual tour of the future compressed air system long before the first compressor is even installed.





# Measure, save, evaluate

## The equipment for ADA & KESS



### Compressed air audit with SIGMA AIR MANAGER 4.0

The SIGMA AIR MANAGER 4.0 continuously measures, stores and documents all data relating to load / idle performance, duty cycle, energy consumption, network pressure and air demand. All data can be viewed via any Internet browser and exported for regular compressed air audits.



### Quick and easy data storage

Data such as air delivery and pressure can be stored in the SIGMA CONTROL 2 compressor controller via SD card and be used in the energy calculation. The results are then analysed and evaluated using KAESER's Energy Saving System (KESS).



### ADA 4.0 equipment

Installed on a rental basis for ten working days, the measurement procedure is the same for all compressors. An opto-coupler ensures reliable data transfer to the ADA data-logger which records compressor load/ idle data. The results are then evaluated using KAESER's Energy Saving System (KESS).



### ADA 20/30 equipment

Installed on a ten day rental basis, the ADA 20 continuously records the airflow by measuring the pressure differential. The information stored in the data-logger forms the basis for effective system optimisation. The ADA 30 is permanently installed in the air distribution network and its data can be called up at any time via the measurement data processor.

## Air Demand Analysis measurement equipment

### ADA 10: Measurement based on compressor load/idle ratio

<b>ADA 10</b> (Rental basis)	For measurement from compressors with load/idle/ on-off control	For measurement of system pressure <ul style="list-style-type: none"> <li>Alternatively, for speed measurement from variable speed compressors*</li> <li>Alternatively, to measure inlet volume data from compressors with proportional control (also for modulating and inlet throttling control)*.</li> </ul>
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\* Additional measurement equipment may be necessary

### ADA 20 and 30: Measurement of volumetric flow

ADA 20 (Rental basis)	Measuring range at 7 bar <sub>(g)</sub> m <sup>3</sup> /min	ADA 30 (Sale)	Measuring range at 7 bar <sub>(g)</sub> m <sup>3</sup> /min	Metering pipe length mm	Max. pressure bar <sub>(g)</sub>	Connection	Weight kg
ADA 20 / DN 25	0.9 - 5	ADA 30 / DN 25	0.9 - 4.4	700	40	R 1"	5.5
ADA 20 / DN 40	2.2 - 11	ADA 30 / DN 40	2 - 9.8	800	16	R 1 1/2"	7
ADA 20 / DN 50	3.8 - 19	ADA 30 / DN 50	3.6 - 18	950	16	R 2"	9
ADA 20 / DN 65	7 - 33	ADA 30 / DN 65	6.4 - 32	1175	16	R 2 1/2"	13
ADA 20 / DN 80	10 - 49	ADA 30 / DN 80	9.3 - 46.5	1400	16	DN 80	20
ADA 20 / DN 100	16 - 82	ADA 30 / DN 100	16.4 - 82	1700	16	DN 100	27
ADA 20 / DN 150	39 - 171	ADA 30 / DN 150	34 - 171	2450	16	DN 150	55

ADA 30 scope of delivery: includes microprocessor, painted metering pipe, housing for microprocessor, pressure transducer, PT100 resistance thermometer, pressure differential transducer.

### ADA 20 and 30: Correction factors for deviating operating conditions

Pressure bar <sub>(g)</sub>	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor	0.79	0.866	0.935	1	1.061	1.118	1.172	1.225	1.274	1.322	1.369	1.415	1.458

# KAESER – The world is our home

As one of the world's largest compressed air systems providers and compressor manufacturers, KAESER KOMPRESSOREN is represented throughout the world by a comprehensive network of branches, subsidiary companies and authorised partners in over 100 countries.

With innovative products and services, KAESER KOMPRESSOREN's experienced consultants and engineers help customers to enhance their competitive edge by working in close partnership to develop progressive system concepts that continuously push the boundaries of performance and compressed air efficiency. Moreover, the decades of knowledge and expertise from this industry-leading system provider are made available to each and every customer via the KAESER group's global computer network.

These advantages, coupled with KAESER's worldwide service organisation, ensure that all products operate at the peak of their performance at all times and provide maximum availability.



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