

SIGMA AIR MANAGER 4.0 in harmony with building control systems

Perfect partners

Photo: F.X. MEILLER Fahrzeug- und Maschinenfabrik GmbH & Co KG

The year MEILLER was founded, 1850, coincided almost exactly with the transition from early industrialisation to the Industrial Revolution in Germany. The First Industrial Revolution used water and steam power to mechanise production. Today MEILLER is a leading player in the Fourth Industrial Revolution, a transformation that is merging technologies and blurring human-machine interfaces.

MEILLER stands for technological excellence. Specialising in the production and sale of tipping superstructures and trailers, world-renowned MEILLER hydraulic equipment and high-quality lift doors, F. X. Meiller Fahrzeug- und Maschinenfabrik GmbH & Co KG has developed during its 169-year history into a market leader in the construction, waste management and utility vehicle

sectors. MEILLER now has locations in Munich, Karlsruhe, Switzerland, Czechia, Poland, France, Russia, the UK and Austria. With a ground-breaking ceremony in the Austrian town of Oed bei Amstetten in October 2018, the company began preparations to replace its existing plant in Waidhofen/Ybbs. When completed, the facility will also be home to MEILLER's new Austrian head-





management system in accordance with ISO 50001. This requires all data, energy consumption figures and key indicators to be definable, retrievable and available for analysis. This involves the use of the latest technologies: MEILLER has been using building control technology since the new administration building was completed in 2016. It is used to log the operational status of system components and directly capture measurements, and to handle central control of the lighting, ventilation and heating systems along with the supply of cool and warm air.

When the time came to update the compressed air system in 2018, the company looked for compressed air system suppliers that could offer not only a compressed air station with fail-safe and energy-efficient components, but also an Industrie 4.0-compatible controller capable of perfect coordination with the building control technology, in order to ensure access to compressed air system data from the various user devices. After demonstrating its ability to meet both requirements in every respect, KAESER received the order to upgrade the compressed air station.

Industrie 4.0 in top form

Due to the many production applications where it uses compressed air, MEILLER attaches great importance to the energy efficiency and reliability of the related equipment. Compressed air is used for the CNC machines in the hydraulics division and to drive the robots, torque wrenches, compressed air wrenches, presses and valves, the paint systems and pistols, and the compressed air cranes.

To specify the appropriate compressed air components, an ADA analysis (Air Demand Analysis)

quarters.

Meanwhile MEILLER has launched a further chapter in its history with a new, relatively young business segment: "Meiller-Gärten" is one of the largest private-sector projects for the construction of rental housing in the city of Munich. A total of 600 apartments and a 150-room boarding house are now being built with floor space of 100,000 m², distributed across 14 buildings on eight plots of land. The project takes direct aim at Munich's notorious housing shortage. The new housing will also benefit MEILLER employees.

Industry-standard smart homes

MEILLER, which holds both ISO 14001 and EMAS certification, is deeply committed to environmental protection. Consequently, one of the company's main objectives is to significantly reduce its CO₂ emissions. To that end, it has implemented an energy

The integration of the SIGMA AIR MANAGER 4.0 controller into the building control system ensures that the operating parameters of the compressed air station can be accessed from a PC at any time.



The user can view all operating data from the compressed air system on the screen and display other parameters from the building control system.

was initially carried out to determine the actual compressed air needs and a detailed consumption profile. The ADA revealed a required air flow of approximately 5.5 million m³ per year. To deliver that quantity, the previous compressed air system consumed 662,000 kWh. It was immediately clear that the potential energy savings with the purchase of new compressed air components would be substantial. In addition, the project met all criteria for claiming a BAFA subsidy equal to 30 percent of the purchase price. As a result, two old compressors from another manufacturer were replaced by a single high-efficiency, frequency-controlled KAESER DSD 205 SFC rotary screw compressor. The upgrade also included a new TF 280 dryer and the SIGMA AIR MANAGER 4.0 master controller, as mentioned above, which could connect the machine to the



line with MEILLER's environmental protection strategy is the heat recovery concept. This involves the year-round use of the waste heat from the compressor, resulting in a 72 percent improvement in efficiency.

We have taken a decisive step towards CO₂ reduction. The compressed air station is part of our environmental strategy.

building control system. The existing compressed air receivers located outside the compressed air station were integrated into the new concept.

Effective environmental protection

With the station running reliably and smoothly since the project was successfully completed in mid-2018, the time has come to sum up the results - the figures show that the goal of a drastic reduction in CO₂ emissions has been achieved: The new compressor has reduced annual energy consumption by nearly 124,000 kWh, which means savings of 74.5 tonnes in CO₂ emissions. The new dryer is also saving energy and reducing emissions. As compared with the old system, where drying consumed 38,896.52 kWh per year, MEILLER now uses just one fifth of that amount, namely 7,735.04 kWh. That represents a reduction of 18.7 tonnes in annual CO₂ emissions. Combining those figures, the new compressed air station can therefore be credited with impressive annual savings of 93.2 tonnes. Also very much in

One-stop shop

Franz Zehetmeier, the director of plant development and processes, has high praise for the implementation and realisation of the project. Everything – from the planning stage through to the set-up, the necessary refurbishment work, and the integration into the building control technology – went smoothly and was completed to the customer's full satisfaction: "KAESER took care of everything under its own responsibility and with the help of reliable service providers and local KAESER partners. We didn't have to do a thing." Especially impressive from Franz Zehetmeier's standpoint is the fact that the commissioning of the KAESER rotary screw compressor required no production downtime, since all parties involved in the planning and implementation worked together seamlessly to complete the entire switchover on a national holiday.



For MEILLER, the manufacturing of mechanical parts to high tolerances is a top priority.