

# CHAMPION

## PREDICTIVE MAINTENANCE

in a compressed air supply through  
a cloud-based status assessment

**iConn**  
by Gardner Denver



Owing to the fact that, in contrast to electricity generation, companies generate the indispensable “energy of compressed air” themselves, they are also responsible for its long-term and reliable availability. Inevitably, due to the digitalisation of the production processes, a fundamental change was made in the field of maintenance tasks. With **iConn**, Champion has developed a cloud-based platform which allows the user to look at the compressor and its performance data virtually, from a computer or a tablet: **iConn “Stay in touch” – the right information at the right time.** iConn forms part of the standard equipment in new Champion compressors, but it can also be integrated into existing compressor systems, and even equipment by other manufacturers, as a retrofit solution.

Marius Breusers, Aftermarket Product Manager: “Today, we look at the compressed air supply in producing companies using a holistic approach, regardless of their size. At a very early stage of our activities in countries with a low density of industrial infrastructure, we learned the crucial importance of the predictive maintenance approach. This led to us developing iConn – a digital platform for IoT and Industry 4.0 solutions, for proactive monitoring of information from compressed air systems in real time – very early on.”

### Preventive maintenance

Those dealing with the maintenance of compressors should be aware that the maintenance costs – calculated over the product life cycle – are similar to the acquisition costs. For these reasons, in the past, many compressed air users switched their service strategy from “parts replacement when needed” to “preventive maintenance” and now replace wearing parts before they fail. Undoubtedly, this means they increase the availability of the compressed air station, but are always left facing

a dilemma: too little maintenance can lead to costly failures, production standstills and higher energy costs. Alternatively servicing too early drives up costs unnecessarily, among other things due to the need to stock supplies of expensive parts.

The question is therefore: how do you find the right level of service – according to the principle of “as much as necessary, as little as possible”?



At Wille, iConn also helps tackle one of the most problematic issues of compressed air supply – energy loss due to leaks.

## Case study

Wille GmbH in Delmenhorst shows just how this task can be made particularly economical through the use of the iConn digital platform. As one of the leading compressed air service companies in northern Germany, they have over 20 customers who have been monitoring CompAir compressors with iConn since April 2018. Michael Kaiser, Technical Management and Compressor Sales at Wille: **“iConn helps us with the management of our service work and thus increases the effectiveness of the process for our customers. Warnings and predictive analysis allow for better planning, including the availability of spare parts.”**

Michael Kaiser considers the ease of implementation of the basic version of iConn, which customers can use free of charge, to be a particular advantage: “The compressors connected with us in the engine-power classes from 7.5 to 90 kW, reliably transmit all the data including the current condition and performance on a daily basis.” While most compressors come with the necessary sensors as standard, Wille has already retrofitted some smaller units with an iConn device. For Michael Kaiser, this was particularly important for customer care, as:

“The companies were quickly convinced of the benefits of our monitoring concept and were not disappointed. There was no iConn device that could not be started straight away and the data transmission is reliable even with weak network connection in rural regions or shielding in difficult building situations. Since the data collection and transmission is completely separate from the customer’s IT systems, even for companies with a high level of security, there are no data protection concerns.”

“We got a warning from a compressor at a steel plant, which suggested it was overheating. The issue was resolved without the use of our

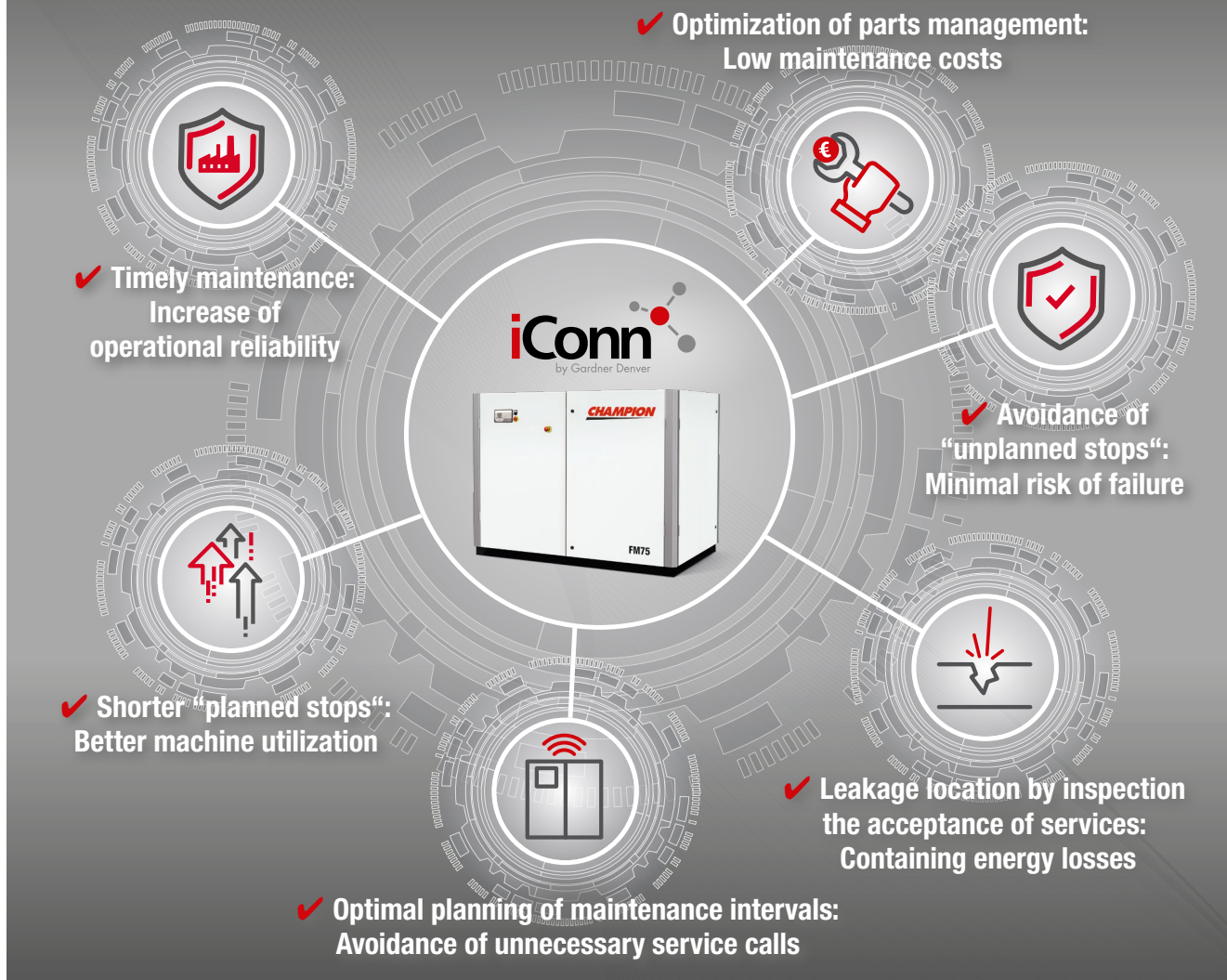
emergency service – over the phone. It turned out that a supplier had blocked the exhaust outlet of the compressor with some pallets.”

### Reducing energy losses

At Wille, iConn also helps tackle one of the most problematic issues of compressed air supply – energy loss due to leaks. A subject that, due to the activities of the Fraunhofer Institute for Manufacturing Engineering and Automation IPA, is once again, currently a hot topic. Prof. Alexander Sauer, Division Manager for Resource-Efficient Production, found that energy costs for the compressed air supply can be reduced by up to 30%. That equates to around 5 terawatt-hours of electricity per year that could be saved if the estimated 60,000 compressed air installations in Germany were to make better use of efficiency potential. At Wille, they adopt a pragmatic approach. Michael Kaiser: “If, in the context of reviewing the data, we detect outliers in the degradation of performance, which do not correspond to the normal consumption scenarios of compressors, we can react and look for the error, e.g. leaks. A recent typical example was a faulty solenoid valve, through which a lot of expensive air was being lost.”



## Customer benefits of proactive maintenance with iConn



### Smart maintenance: configuring iConn according to your needs

iConn is the entry-level solution that provides a detailed and regular overview of the operating hours. Irregularities and maintenance instructions are automatically reported to the user in real time. With iConn Universal, it can be retrofitted to monitor any unit from other manufacturers. You can set up, that the messages will be sent by email to the computer in the maintenance center. In either case, the fault message is sent immediately as the situation arises. In this way, it is possible to take pre-emptive steps before events, such as a drop in pressure, have negative consequences for production. If the authorised persons access the stored data via the web-based iConn page, they can effectively track the life cycle of each compressor.

Smart maintenance with the monitoring of compressors is possible without any investment costs using the basic version of iConn. Even when the additional functions are activated, it is not a luxury, but

rather an economically sensible investment, which can be used to ensure smooth production processes.

With these additional features added, the system becomes iConn HD and enables predictive maintenance planning with an “early warning system” for machine faults. This enables the user to conduct forward-looking, demand-oriented maintenance (predictive maintenance), which is perfectly aligned with the motto of “maintenance if and only if the probability of failure is rising”. Web-based remote monitoring with dashboard control is also available. This digitised service includes both predictive maintenance planning as well as maintenance and periodic energy analysis in order to relieve the burden on compressed air users entirely; energy savings and thus a sustainable use of the compressed air as a means of production are also included.