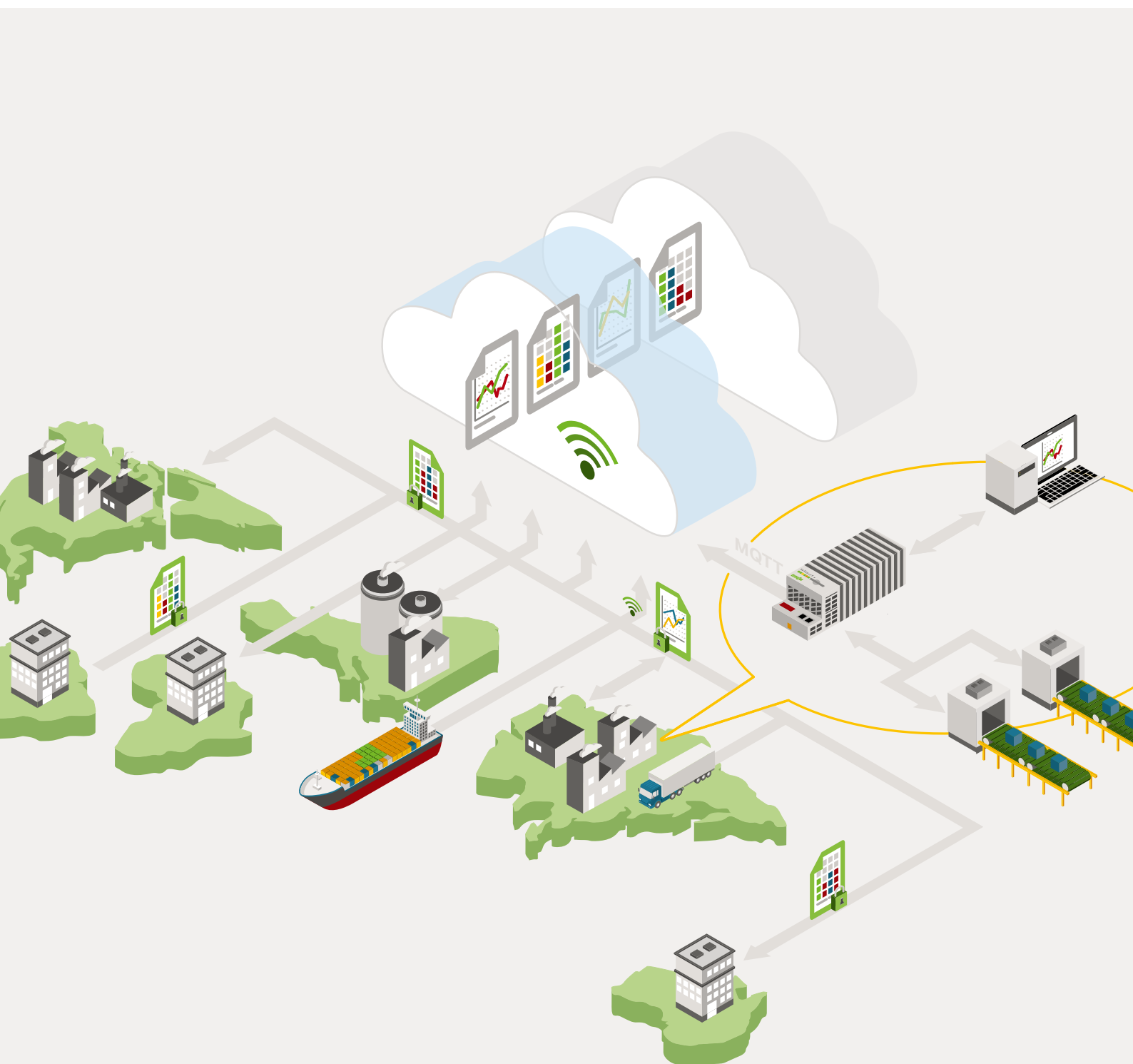# From the Field Level up to the Cloud
WAGO Cloud Connectivity
and WAGO Cloud Data Control

WAGO CLOUD DATA CONTROL

From the Field Level up to the Cloud

With WAGO Cloud Data Control to New Business Models

With WAGO Cloud Data Control, we offer a solution that links elements from the real and digital worlds. WAGO Cloud Data Control manages and monitors all WAGO PFC Controllers, as well as their applications and data. A Web portal serves as a user interface for the cloud service hosted at Microsoft Azure. Customers have access to functions – like project, controller, and user management, controller status monitoring, alarm functions and email messaging – through this gateway. Decentralized data acquisition and centralized data provision, from the field level up to the cloud, as well as cross-location access to current data, all play decisive roles.
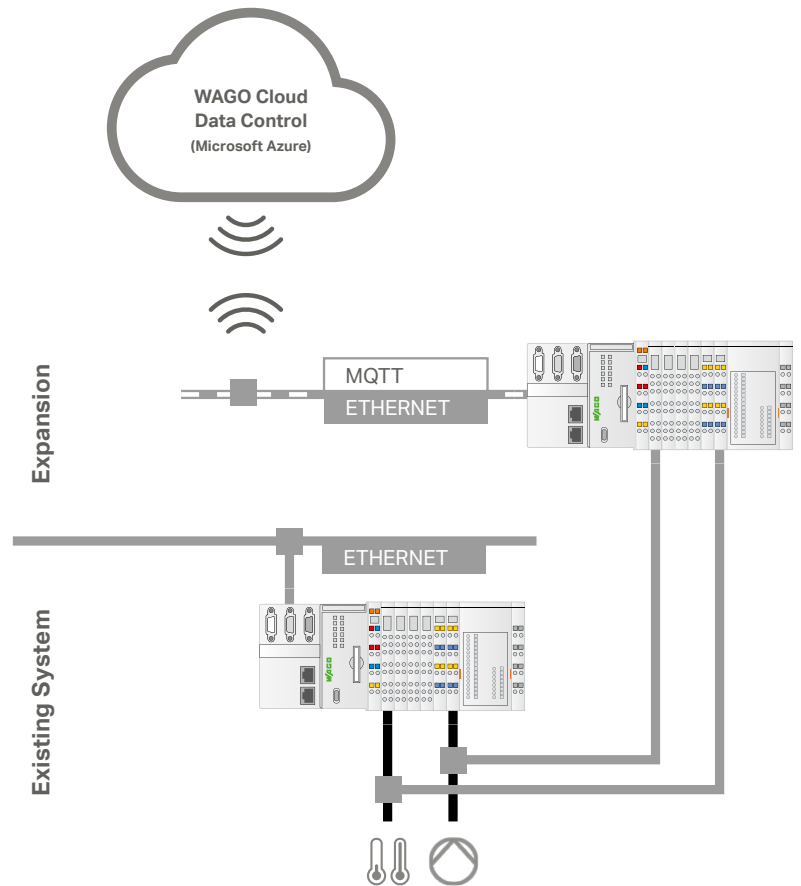
Retrofit – Parallel Installation to Existing Systems
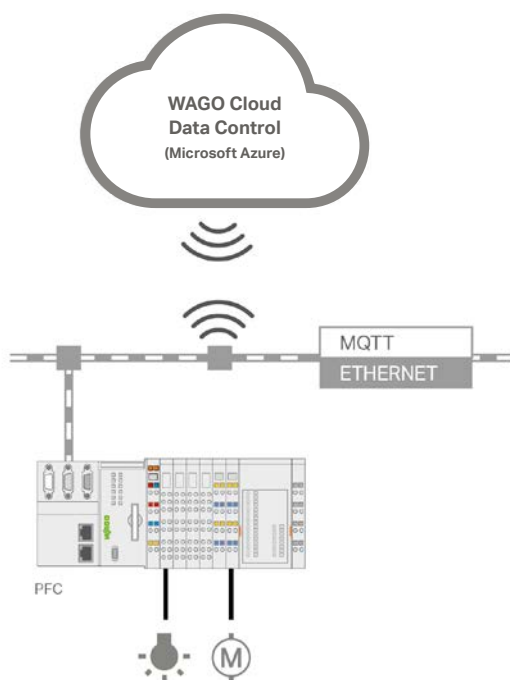
Installation of a New System

ADVANTAGES:

- Universal solution for various applications thanks to individual dashboards
- Scalable IoT solution: expandable and customizable via REST/OPC UA interface
- Central system status monitoring and notifications via alarm handling
- Secure communication via TLS 1.2 encryption
- Central data visualization via location-independent access to the WAGO Cloud Data Control

Additional information:
www.wago.com/cloud

WAGO CLOUD IN DETAIL

Universal solution for various applications

With WAGO Cloud Data Control, individualized dashboards are easily set up to suit the application. Data and information can then be displayed in clearly arranged tables, diagrams and maps. Whether for process optimization in machine and system operation or for monitoring computer centers, WAGO Cloud Data Control retrieves data and information, such as location, status, current measurement values and measurement data trends from the connected PFC and displays them graphically exactly as the user wants.

Headquarters Status Monitoring

The cloud's alarm handling feature facilitates central status monitoring, wherein exceeding defined limiting values triggers a report. At the same time, technicians can use the cloud to inspect equipment and systems regardless of their location, thus guaranteeing optimum availability and minimizing downtime through continuous monitoring.

Secure Communication

Wherever cloud technologies and the associated continual data exchange are used, secure communication to protect machines and systems is paramount. It is essential that traditional security measures, such as firewalls, password protection and individual user rights, protect data within locations from unauthorized access. WAGO PFC100 and PFC200 Controllers minimize this security risk by encrypting data via onboard SSL/TLS 1.2 security protocols and securely transmitting data to the cloud via VPN tunnel.

Central Data Visualization with Location-Independent Access

Only complete, end-to-end information flow can optimize business processes over the long term. One important advantage of WAGO Cloud Data Control, therefore, is the central data visualization enabled by location-independent access to all data from the connected WAGO PFC. The centrally displayed data, transmitted in real time, is available to all authorized users. User management controls the respective access rights. Thus, not only is cooperation within the individual company optimized, but external partners can also conveniently and flexibly access data – no matter their device or Web browser.

MQTT
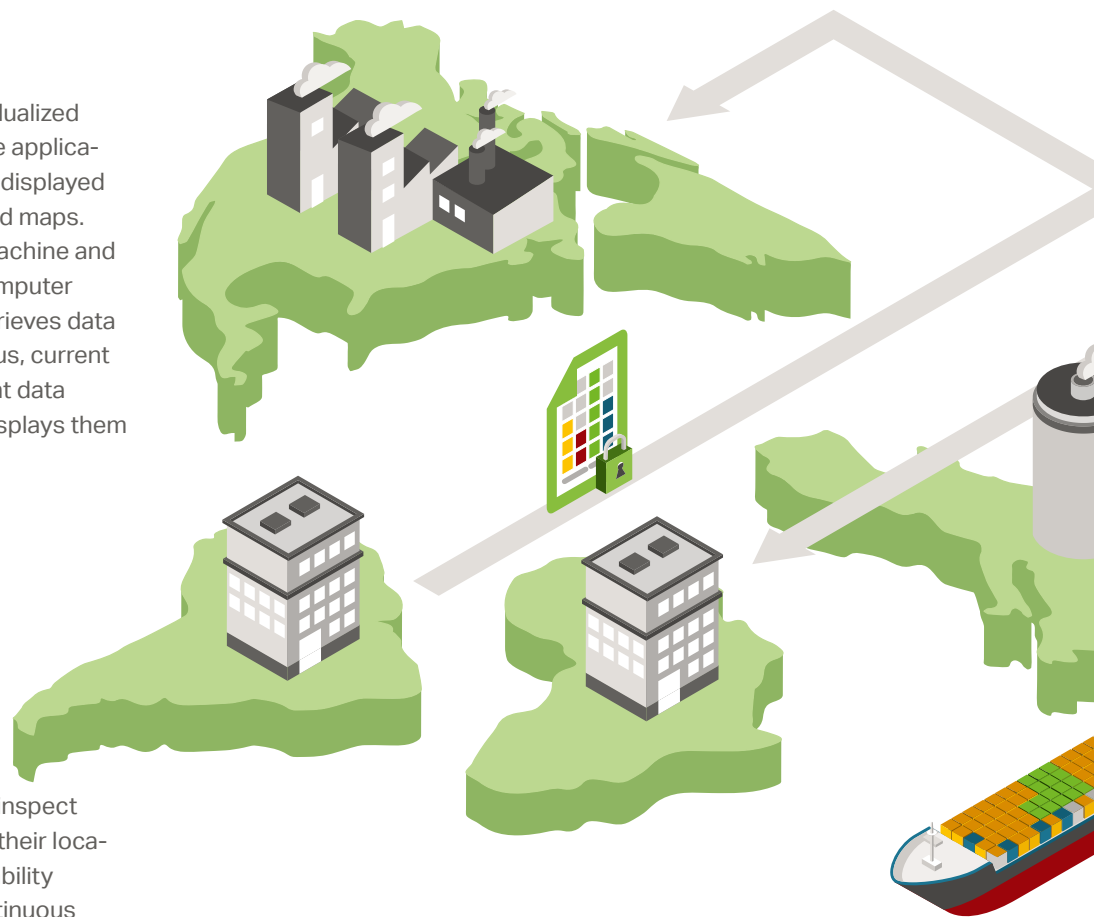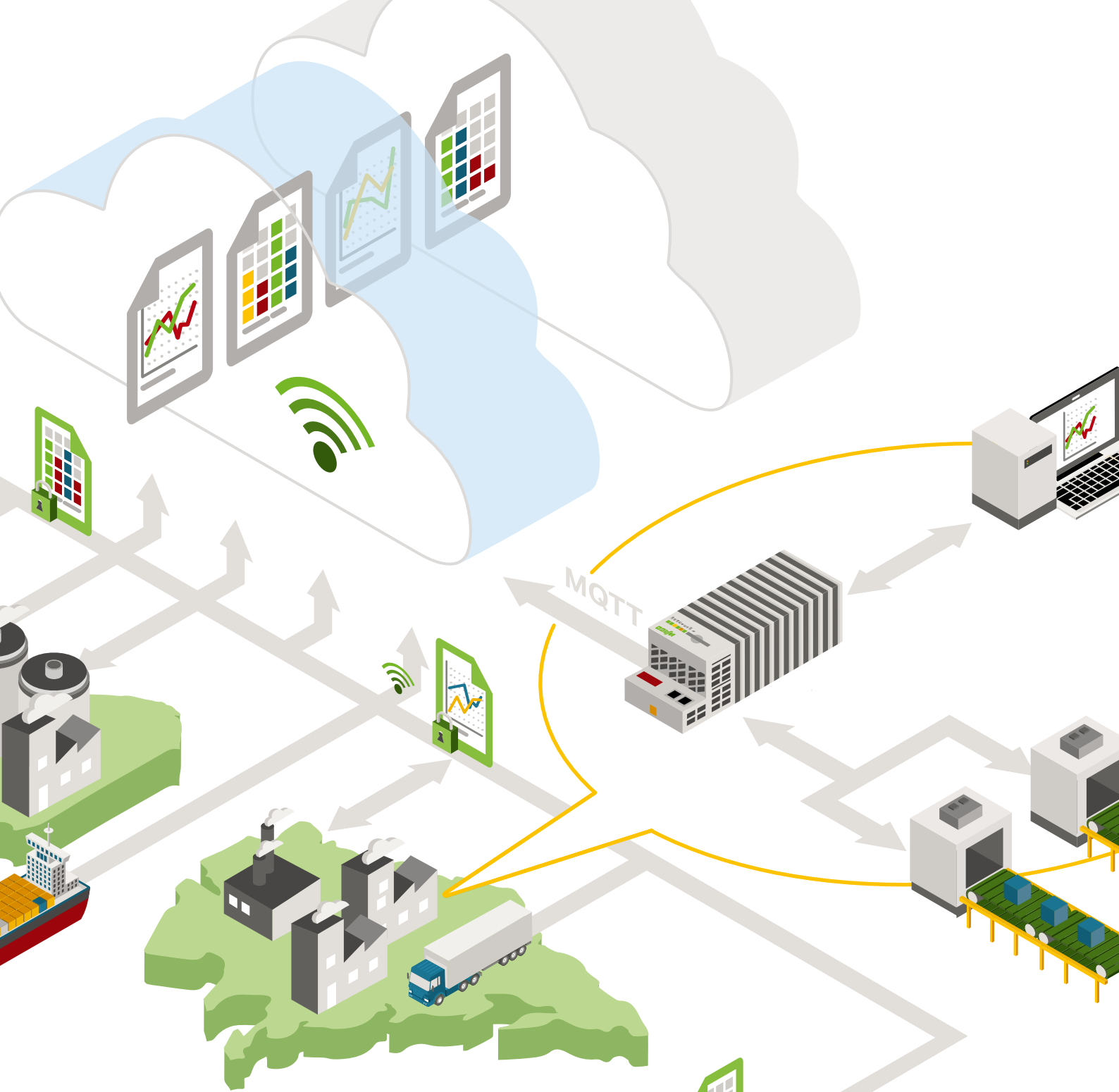
Scalable Solution
Thanks to Our Reliable Partner

With M&M as a member of the WAGO group, WAGO has a partner for holistically developing industrial and technical software solutions. M&M collaborates closely with Microsoft to implement corresponding solutions in the cloud and IoT, primarily using Azure. Microsoft Azure is highly scalable in computing power, data storage, transactions, availability, and security standards. It offers a quickly growing number of services and tools to provide an optimal foundation for implementing solutions tailored to our customers. Thanks to the REST/OPC UA interface

in WAGO Cloud Data Control, it is possible to link our cloud service with a customized solution from M&M. WAGO and M&M jointly provide a complete solution, including hardware, software and additional services – not only for energy monitoring, but for predictive maintenance applications as well.
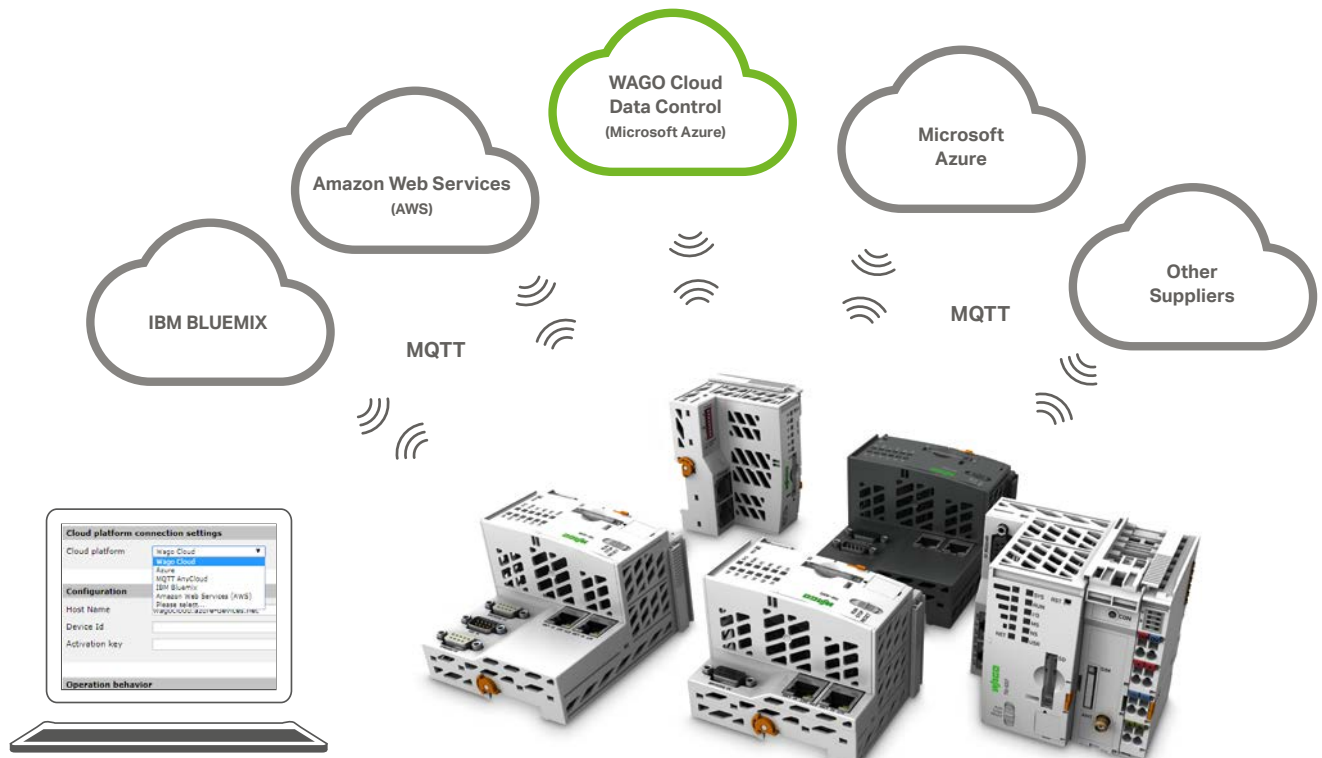
CLOUD CONNECTIVITY VIA MQTT

Standard in Every Member
of the PFC Controller Family

Record, digitalize and link data profitably – this is the core concept behind Industry 4.0. Both WAGO-I/O-SYSTEM 750 and 750 XTR connect to the field level, and a PFC Controller sends data to WAGO Cloud Data Control. Here, they can be aggregated and used for analysis. This creates true added value for your company – be it for increasing the efficiency of in-house production, implementing energy management in buildings, or developing further end customer services. Existing systems also become IoT-ready, making them sustainable into the future.

Communication between PFCs and cloud suppliers is conducted via MQTT protocol and encrypted via TLS 1.2. The cloud connection data is configured via Web-Based Management (WBM). With the appropriate library, variables to be transferred to the cloud can be defined using the IEC program. Following this step, status information such as Run/Stop, connection status, device information, and variables defined in the IEC program can be transmitted to a cloud and visualized. With their wide variety of interfaces, the WAGO Controllers also offer the perfect foundation for an IoT gateway. These modular and scalable controllers collect every field signal, communicate in all industrial protocols and even enable cloud connection to sensors and actuators that themselves have no Web interface. Thanks to the standardized MQTT protocol, it is also possible to connect to cloud services such as Microsoft Azure, Amazon Web Services or IBM Bluemix.

www.wago.com/cloud-connectivity

Cloud Configuration via
Web-Based Management

Cloud connectivity is possible with all
PFC100 and PFC200 Controllers.

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