# Rethinking Telecontrol Technology -

# The WTG Protocol Converter from WAGO

**With the Telecontrol Gateway, WAGO offers a manufacturer-independent connection of up to 16 telecontrol substations to the control system**

Regardless of whether they supply water, electricity, heat, or gas, the importance of decentralized participants and the complexities of the control systems are constantly increasing. Often, a network arises through aggregation, combining interfaces from different manufacturers. Operators are forced to involve the control system manufacturers with every system adjustment, programming change or parameterization. Intelligent, flexible telecontrol solutions are thus more necessary than ever. WAGO's new, compact Telecontrol Gateways (WTGs) enable connection of up to 16 substations in an open structure at the control level. This provides suppliers with a new degree of freedom, transparency, and cost efficiency. Thanks to the narrow design, the new, compact telecontrol gateway is particularly suitable for decentralized use in solar or wind farms, and represents a novel solution to process controls with regards to scalability.

**Connectivity and Security**

WAGO's WTG introduces, for the first time, an open transmission level between participants at the field and control levels. A PFC200 with WAGO telecontrol software as a communication gateway connects the telecontrol substation to the control level (according to IEC 60870-5-101/104). Up to six RS-232 I/O modules can be connected to the PFC200 for serial communication in the field. The WTG can be used everywhere that telecommunication substations are supposed to be powered up, independent of the manufacturer, or where limitations in control technology – with regard to the number of possible connections – need to be alleviated. Connections to the field level are provided via standard wiring, dial-up connections, or transparent TCP/ IP connection (DSL or GPRS router), and to the control level via ETHERNET or serial communication. Data are communicated reliably and securely to the control center, such that no additional parameterization is necessary. An optional redundant structure is also possible via a TCP/IP connection of two WTGs to a control system. This ensures increased security, particularly in areas of critical infrastructure. In addition, for example, the PFC200 can be hardened according to the BDEW White Paper and is designed to implement the current highest security requirements according to ISO 27002.

**Maximum Scalability and Cost Efficiency**

The WTG enables comprehensive data collection from all telecontrol substations, regardless of manufacturer, and centralized transmission to the control level. In addition to data transfer bundling, it also supports coordination of incoming and outgoing analog, GSM or ISDN dial-up connections to substations. No special parameterization software is required for operation. Using Web-Based Management (WBM), operators can, within the parameters of their license agreement, add participants and carry out system adjustments. This simplifies the installation of telecontrol substations and reduces integration costs. Costs arising from external servicing are eliminated as unnecessary. The improved data transparency allows operators to recognize potential errors in the field at the transmission level, and thus these errors can often be independently alleviated.

**Flexible and Complete Solutions**

With its detailed modular design, the WTG meets the high requirements for telecontrol technology in the energy, environmental and process sectors. In addition, it is an application for the fieldbus-independent I/O-System from WAGO, in which more than 500 I/O modules are available to the user – from high-density 16-channel digital modules to special modules such as 3-phase power measurement modules. The components of

the flexible WAGO-I/O-SYSTEM ensure optimized monitoring in transmission and distribution networks and ensure the power supply based on efficient and reliable system operations. They are compatible with IEC protocols 60870-5-101/-103/-104, IEC 61850/61400 and DNP3.