



**ENSURE
RELIABILITY**

PRODUCT RELEASE

DER Controller - IEEE 1547-2018, 2030.5 (CSIP) Compliant

The WAGO Distributed Energy Resources (DER) Controller is a CODESYS 3.5 library function block with an algorithm for voltage, frequency, and reactive power control in energy generation plants. DER refers to small-to-medium sized scale power-generation and energy storage systems. Connecting a DER controller to the grid requires communication between the energy resource and the grid operator, ensuring a reliable power system. Therefore, standards such as IEEE 1547-2018 are being adopted to help provide a trouble-free connection between systems.

IEEE 1547-2018 has 11 clauses addressing a wide variety of terminology and technical elements. The WAGO DER controller function block supports Clause 5 relating to reactive power and voltage/power control. It also reinforces Clause 10, related to interoperability for information exchange. The function block meets the most recent communication protocol, IEEE 2030.5 (CSIP), and has been validated and verified by a Nationally Recognized Testing Laboratory. These devices can be installed in buildings and communities that are tied to the area electric power systems.

The library function block that runs in our controllers is programmed with CODESYS 3.5 software.
The library can be used for a 30-day trial period at no cost, after which a license for that specific controller is required.

Features	Benefits
IEEE 1547-2018 Function Block	Save time and money by using WAGO's pre-engineered application that meets Clause 5 and Clause 10 requirements
DNP3 / IEEE 2030.5 (CSIP) / IEC 61850 Protocol Support	Northbound communications to utilities is supported in WAGO DER Controllers
Tested by Nationally Recognized Test Lab	Be confident that when using the WAGO DER Controller library, your system will meet the standard's requirements and that energy suppliers will be able to communicate with your customer's system
Runs in WAGO PLCs	A scalable solution. For small systems, use WAGO's Compact Controller 100, mid-size systems use PFC200, and large systems use PFC300 or Edge Controller
Use with PFC200s XTR for extreme environments	For outdoor applications use WAGO's PFC200 XTR designed for control in harsh environments
CODESYS 3.5 for Monitoring and Control	Use the DER controller library for IEEE 1547 functions as well as the control capabilities of CODESYS to monitor and control other functions of your system
SunSpec MODBUS Series 700 support	Communicate directly with inverters without the need for protocol converters. Support both functions: Client and Server.
Economical Solution	Save money by using the pre-engineered function block instead of developing the application in-house. Select the right controller for the application instead of a high-cost general controller used for wider applications.

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**Distributed Energy Resources Controller
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Competition:

- As far as automation companies, there are only two (2) companies that have this functionality: Schweitzer Engineering Labs (SEL) and Bachmann.
- Note that SEL's offering is typically 2X to 3X our price and we rarely, if ever, bump into Bachmann. SEL units have a large footprint and are not well-suited for OEM applications. Competitors are "hot on our heels", however. Leverage WAGO's current position of significant competitive advantages! Currently, SEL does not support IEEE 2030.5.

Target Customers:

- OEMs
 - Battery storage manufacturers
 - Inverter companies
- Solar Installers
- Engineering, procurement, and construction firms developing renewable energy plants
- Microgrid companies
- Generator manufacturers
- Utility companies

Complementary Products:

- Power Supplies
- Terminal Blocks
- Ethernet Switches
- Pre-Wired Enclosures

Selling Features:

- Tested, pre-engineered library function block for IEEE 1547-2018 Clauses 5 and 10.
- Scalable solution: Use the controller that best fits the application and budget.
- Support of SunSpec MODBUS series 700, IEEE 2030.5 (CSIP Certified), and DNP3 plus other protocols.
- Reduce hardware costs: Utilize the monitoring and control features of CODESYS 3.5 combined with WAGO PLCs and Edge devices for your IEEE 1547 needs plus other control functions of your system.

Targeted Questions:

- Will your Distributed Energy Resource be connected to the grid?
- What concerns do you have about communicating with your energy supplier/utility regarding voltage, power, and reactive power setpoints?
- Do you need your DER controller to support the DNP3 and IEEE 2030.5 protocol to connect to the grid operator?
- Do you need your DER controller to support the SunSpec Modbus series 700 protocol to communicate with your inverters?
- Would it be beneficial and time-saving for you to use an IEEE 2030.5 protocol that is CSIP Certified?
- How beneficial would it be for you to use a pre-engineered and tested solution for IEEE 1547 clauses 5 and 10?
- Would it be a cost savings for you if your DER Controller could also control other functions of your system?
- Will you incorporate the DER controller in an existing enclosure, or would you need to have the controller pre-installed in an electrical cabinet?
- What is the size of your system? Small enough for a Compact Controller 100, or would you need a larger controller like a PFC300 or Edge Controller?
- Would it be beneficial for you if the controller could operate in extreme environments from -40 °C/F to +70 °C/158 °F

Important Links: [WAGO DER Controller Page](#), www.mywago.us

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