The Woodward 2301D and 2301D-EC microprocessor-based controls function like the 2301A load sharing and speed control. The 2301D is a load sharing and speed control; the 2301D-EC is a load sharing and speed control with Extended (Modbus® *) Communications.

*—Modbus is a trademark of Modicon, Inc.

The controls are housed in a sheet-metal chassis for ordinary and hazardous locations, and consist of a single printed circuit board.

The 2301D and 2301D-EC are configured using a computer with Woodward Watch Window software. The configuration software is supplied with each control or may be downloaded from the Woodward website (www.woodward.com). The computer connects to the 2301D and 2301D-EC through a 9-pin connector (RS-232 port).

The control operates from a 24 Vdc supply.

The 2301D and 2301D-EC include:
- 1 Load Sensor Circuit
- 1 Actuator Driver, 4–20 mA, 0–20 mA, or 0–200 mA
- 1 MPU Speed Sensor
- 1 Configurable Analog Output
- 2 Configurable Analog Inputs
- 8 Discrete (Switch) Inputs
- 4 Discrete (Relay Driver) Outputs

The 2301D operates within a range of –40 to +70 °C (–40 to +158 °F).

The Woodward 2301D and 2301D-EC provide load sharing and speed control of generators being driven by diesel or gaseous engines.

With the flexible configuration software incorporated in the 2301D and 2301D-EC hardware, application variations can now be selected using an external computer (PC). Changing the application to accommodate engine speed range, gear teeth, and selection of forward or reverse acting is a matter of software setup.

The 2301D-EC is capable of communicating using a Modbus RTU protocol, functioning as a Modbus slave device, via RS-232 or RS-422 drivers.

The 2301D and 2301D-EC have four operating modes:

**Speed control:**
Has multiple dynamics flexibility. Will work on pumps or compressors. Has capability for remote 4–20 mA speed reference through a configurable analog input.

**Isochronous Load Sharing:**
Is compatible with most existing load sharing speed control systems. Now with soft load and unload capability.

**Droop Base Load:**
Adjustable load control using discrete raise and lower contacts.

**Isochronous Base Load:**
Provides constant load level operation against a bus. The load setting may be fixed, changed using discrete raise and lower inputs, or a remote 4–20 mA input.
Regulatory Compliance

NOTE
Some certifications apply to specific models only.

European Compliance for CE Mark:


Marine Compliance:
- Bureau Veritas
- Det Norske Veritas
- Germanischer Lloyd
- Lloyd’s Register of Shipping

North American Compliance:
- UL Listed for Ordinary Locations for use in Canada and the United States
- CSA Certified for Class I, Division 2, Groups A, B, C, D, T4, and Ordinary Locations for use in Canada and the United States

NOTE Wiring must be in accordance with applicable electric codes with the authority having jurisdiction. These listings are limited to those units bearing the UL or CSA agency identification.

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2301D and 2301D-EC Digital Control (ordinary locations version shown) (Do not use for construction)