723PLUS Digital Control

Standard Applications

Applications

The Woodward 723PLUS Digital Control manages and controls reciprocating engines (gas, diesel, or dual fuel) used in power generation, marine propulsion, and industrial engine and process markets. Standard application software is available which provides a variety of off-the-shelf control solutions for these markets. The following is a listing of the standard (level 1) programmed and configurable 723PLUS Digital Controls:

Power Generation

- 8280-412 DSLC™ Loadshare, LV
- 8280-413 DSLC Loadshare, HV
- 8280-414 Analog Loadshare, LV
- 8280-415 Analog Loadshare, HV
- 8280-416 DSLC/MSLC Gateway, LV
- 8280-417 DSLC/MSLC Gateway, HV
- 8280-466 DSLC Loadshare—Low Speed, LV
- 8280-467 DSLC Loadshare—Low Speed, HV

Marine

- 8280-418 Single Engine Propulsion—Low Speed, LV
- 8280-419 Single Engine Propulsion, LV
- 8280-422 Dual Engine Mechanical Load Share—Low Speed, LV
- 8280-423 Dual Engine Mechanical Load Share, LV
- 8280-1042 Single Engine Propulsion—DSLC Input, LV

Industrial

- 8280-410 Speed Control, LV
- 8280-411 Speed Control, HV
- 8280-424 Performance Control ‘424’, LV
- 8280-598 Performance Control ‘598’, LV
- 8280-464 Process Control, LV
- 8280-465 Process Control, HV

Programming

The controls listed above are standard pre-programmed 723PLUS Digital Controls. Woodward and its authorized Distributors can provide custom programming for the 723PLUS/828 Digital Control to meet the need for specialized functions in process, generator plant, engine, and marine applications. The custom version may be a variation of standard control software or totally new. The custom version may be used as a unit control or as a system control for such things as sequencing, load shedding, heat recovery management, and system monitoring and alarming.

Adjustments

Adjustments may be made quickly and easily through the Watch Window or Control View PC Interface [not supported on 8280-1042] or an optional hand held programmer. Both adjustment methods are menu-driven and record all set points. More information is on the Industrial Controls section of our website (www.woodward.com).

- Programmed and configurable for off-the-shelf control and monitoring in power generation, industrial engine, process, and marine applications
- 32-bit microprocessor
- 1 Watch Window or hand held programmer communication port
- 2 serial ports with Modbus®*, and Servlink protocol choices
- 2 local operating network (LON®**) channels
- Digital reference and ramps for speed, pressure, temperature, etc.
- Configurable update time groups—10 to 80 milliseconds
- CSA Certified
- CE Compliant

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*—Modbus is a trademark of Schneider Automation Inc.
**—LON is a trademark of Echelon Corp.
Communications

The 723PLUS Digital Control provides two separate serial interfaces for RS-232, RS-422, or RS-485 communications. In some models both ports feature an industry-standard Modbus protocol (ASCII or RTU) that can interface to a Modbus master device such as a Human/Machine Interface (HMI). In other models one port features an industry-standard Modbus protocol (ASCII or RTU), and the other port features Woodward Servlink protocol for a Watch Window or Control View PC interface. Baud rates are tunable to meet specific user requirements.

The 723PLUS control can also communicate using the local operating network (LON) protocol for digital communications. The 723PLUS/828 control I/O ports may be expanded through LinkNet® nodes. Typical LinkNet nodes include thermocouple, RTD, analog, and discrete type I/O.

Self-Diagnostics

The 723PLUS Digital Control has integrated diagnostics to determine the control integrity. Memories, processor, and baseline power supply monitoring are included in the diagnostic tests.
Specifications

Input Power
- Low Voltage Model: 18–40 Vdc (24 or 32 Vdc nominal)
- High Voltage Model: 90–150 Vdc (125 Vdc nominal)
- Power Consumption: 40 W nominal
- Inrush Current (Low Voltage Model): 7 A for 0.1 ms
- Inrush Current (High Voltage Model): 22 A for 15 ms

Inputs
- Speed Signal Inputs (2)
  - Speed Input Voltage: 1.0–50.0 Vrms
  - Speed Input Frequency: Magnetic Pickup: 400 Hz to 15 kHz
  - Proximity Switch: 30 Hz to 15 kHz
  - Speed Input Impedance: 10 kΩ ± 15%

- Discrete Inputs (8)
  - Discrete Input: 24 Vdc, 10 mA nominal, 18–40 Vdc range
  - Response Time: 10 ms ±15%
  - Impedance: 2.3 kΩ

- Analog Inputs (4)
  - Analog Input: ±5 Vdc or 0–20 mA, transducers externally powered
  - Common Mode Voltage: ±40 Vdc
  - Common Mode Rejection: 0.5% of full scale
  - Accuracy: 0.5% of full scale

- Load Sharing Input
  - Analog Input: 0–4.5 Vdc
  - Common Mode Voltage: ±40 Vdc
  - Common Mode Rejection: 1.0% of full scale
  - Accuracy: 1.0% of full scale

Outputs
- Analog Outputs 0–1 or 4–20 mA (2)
  - Analog Output: 0–1 mA or 4–20 mA (max. 600 Ω load)
  - Accuracy: 0.5% of full scale

- Analog Outputs 0–20 or 0–200 mA (2)
  - Analog Output: 0–20 mA (max. 600 Ω load) or 0–200 mA (max. 70 Ω load)
  - Accuracy: 0.5% of full scale

- Relay Contact Outputs (3)
  - Contact Ratings: 2.0 A resistive @ 28 Vdc; 0.5 A resistive @ 125 Vdc

Environment
- Operating Temperature: –40 to +70 °C (–40 to +158 °F)
- Storage Temperature: –55 to +105 °C (–67 to +221 °F)
- Humidity: 95% at +20 to +55 °C (+68 to +131 °F)
- Lloyd’s Register of Shipping Spec. Humidity Test 1
- Mechanical Vibration: Lloyd’s Register of Shipping Spec. Vibration Test 1
- EMI/RFI Specification: Lloyd’s Register of Shipping Specification

Compliance
- CSA Certified
- American Bureau of Shipping (ABS)
- Bureau Veritas (BV)
- Det Norske Veritas (DNV)
- Germanischer Lloyd (GL)
- Lloyd’s Register (LR)
- Nippon Kaiji Kyokai (NKK)
- Registro Italiano Navale (RINA)
- European Union (EU)
- Lloyd’s Register of Shipping Spec. ENV1, ENV2, and ENV3
- Lloyd’s Register Approval Test Specification No. 1.1996 for Environmental Categories

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**NOTE**—EU Directive compliant applications are not currently able to use proximity switches due to the sensitivity of the switches.

**NOTE** —For Lloyd’s Register applications, use only control-supplied power.
723PLUS Digital Control Outline Drawing
(Do not use for construction)