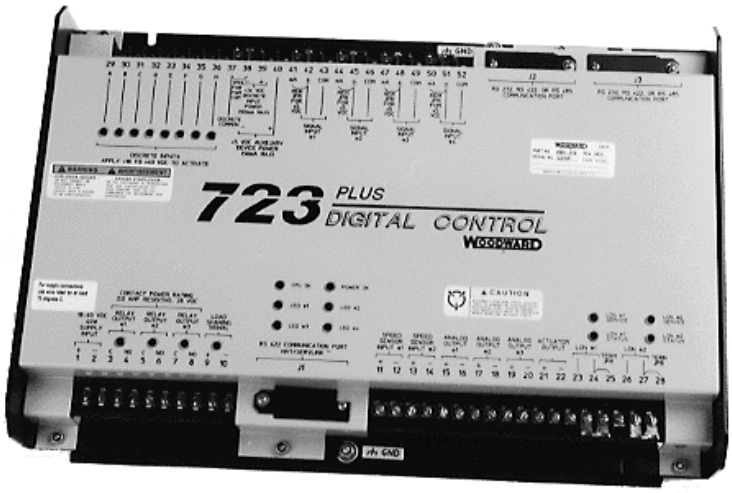
723PLUS Digital Control

Custom Control

Applications



The Woodward 723PLUS Digital Control manages and controls reciprocating engines (gas, diesel, or dual fuel) used in power generation, marine propulsion, and gas compression/ distribution. The control may also be used in cogeneration, power transmission/ distribution, process management, pipeline pump stations, utility power generation, emergency standby power, and remote control station operation. The 723PLUS provides state-of-the-art control for new and retrofit situations.

Programming

Woodward will provide custom programming for the 723PLUS Digital Control. Standard preprogrammed versions for power generation, marine, gas engine, mechanical drive, etc. are available.

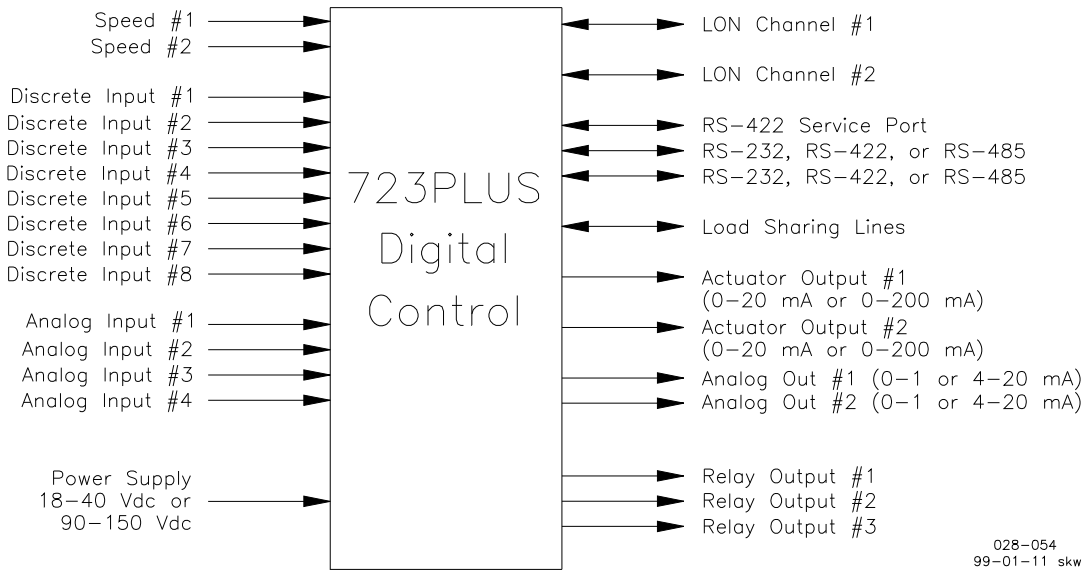
The custom 723PLUS Digital Control can be programmed to meet specific needs for specialized functions in process, plant, engine and marine applications. The custom versions may be used as unit or engine level controls, or as supervisory controls for such things as sequencing, load shedding, heat recovery management, and system monitoring and alarming.

Communications

The 723PLUS Digital Control provides two separate serial interfaces for RS-232, RS-422, or RS-485 communications. The ports feature standard ASCII character handling or an industry-standard Modbus®* protocol (ASCII or RTU). Baud rates are programmable to meet specific user requirements. Devices that may be connected include terminals, printers, data loggers, modems, and any other devices that use RS-232, RS-422, or RS-485. The 723PLUS control can also communicate using the Local Operating Network (LON®**) protocol for digital communications. The 723PLUS control's I/O ports may be expanded through LinkNet® nodes. Typical LinkNet nodes include thermocouple, RTD, analog, and discrete type I/O.

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

- Configurable for control and monitoring in engine, plant, process, and marine applications
- 32 bit microprocessor
- 3 user-configurable communication ports
- Modbus®* protocol
- 2 Local Operating Network (LON®**) channels
- Digital reference and ramps for speed, temperature, pressure, etc.
- Configurable update yime groups—10 to 80 ms
- CSA Certified
- CE Compliant



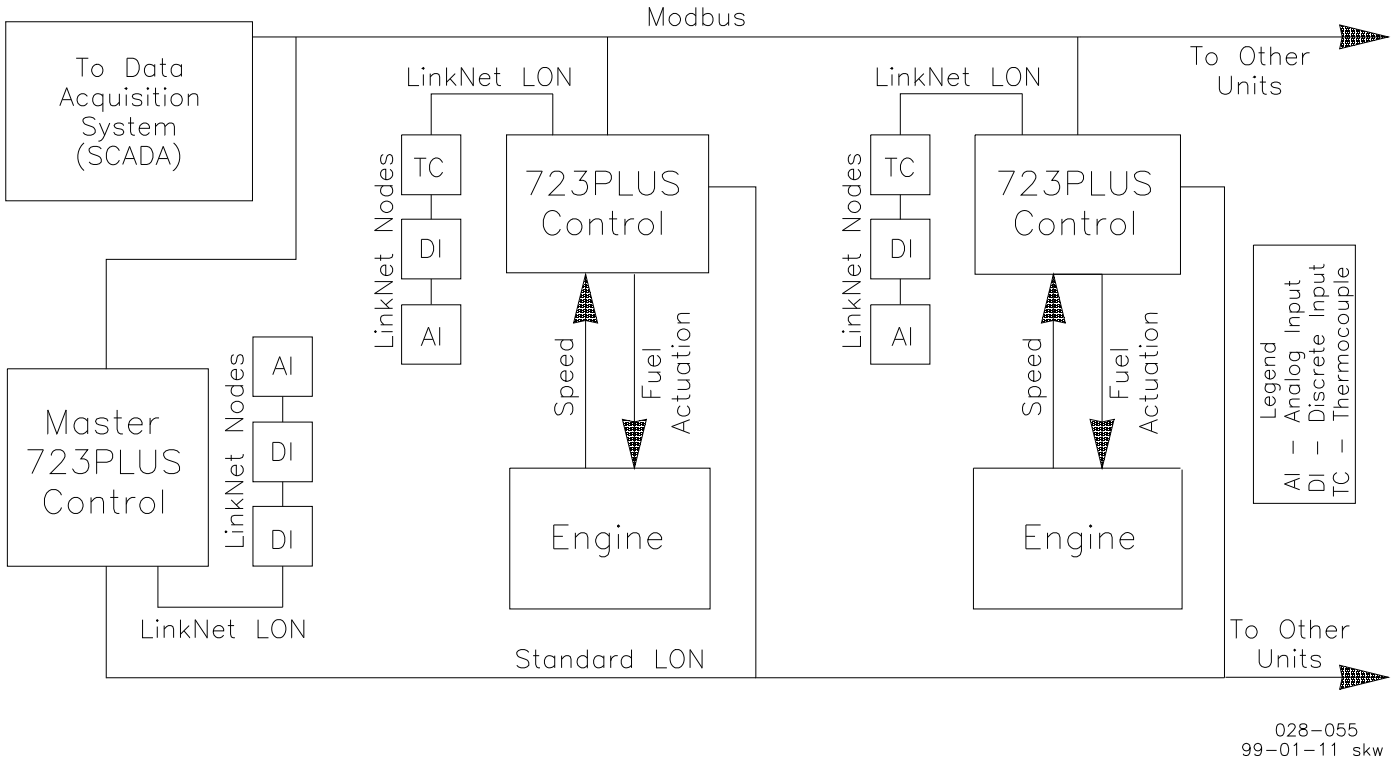
723PLUS Control Block Diagram

Adjustments

Adjustments may be made quickly and easily through the 723PLUS control's standard PC Interface or optional hand held programmer. Both adjustment methods are menu-driven and record all set points.

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.



Typical 723PLUS System Diagram

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	Analog: 400 Hz to 15 kHz; Digital: 30 Hz to 15 kHz
Speed Input Impedance	10 kΩ ±15%

Note: EU Directive compliant applications are not currently able to use proximity switches due to the sensitivity of the switches.

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

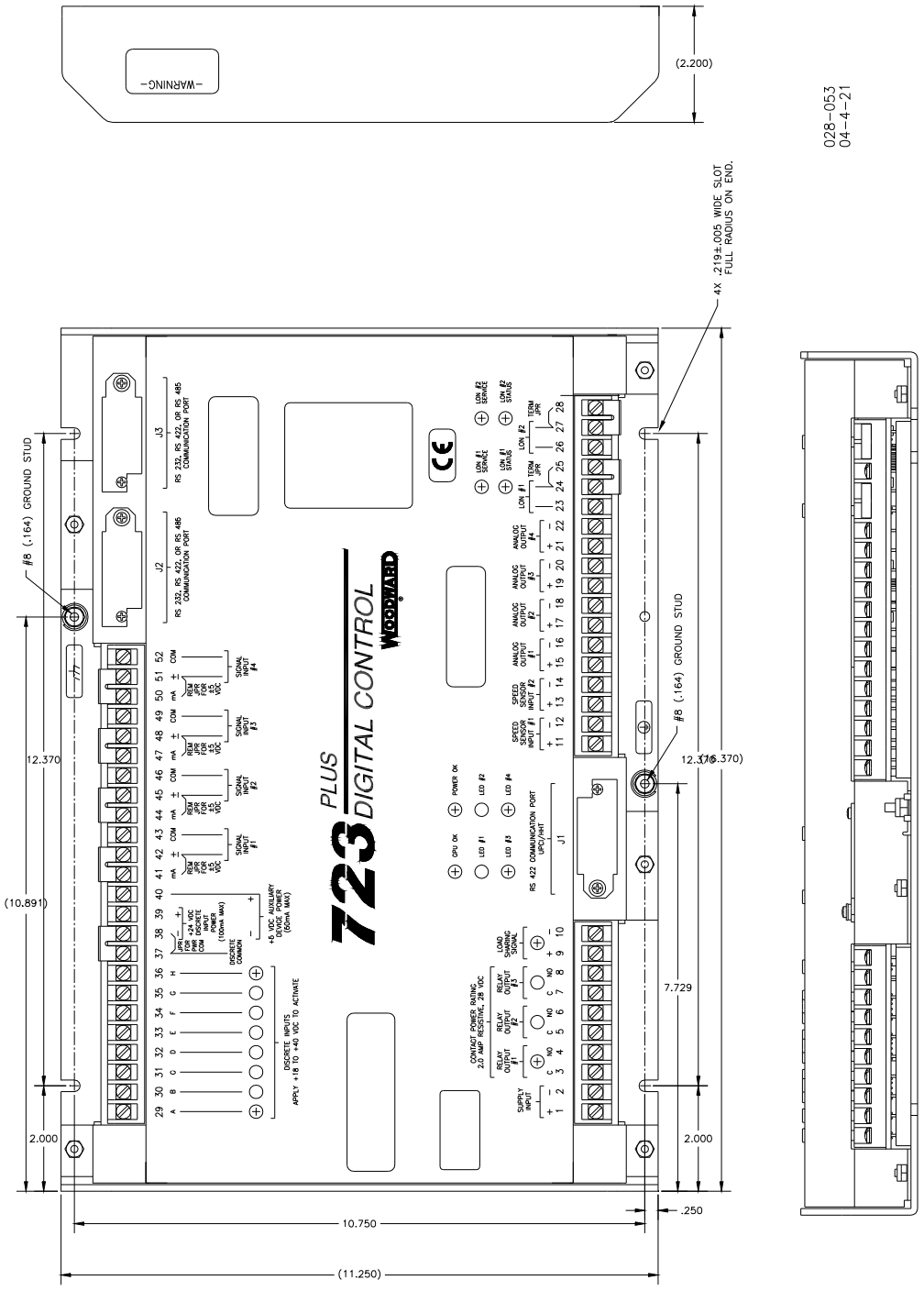
Environment

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 Specification Humidity Test 1
Mechanical Vibration	Lloyd's Register of Shipping Specification Vibration Test 1
Mechanical Shock	US MIL-STD 801C Method 516.2, Proc. I, II, V
EMI/RFI Specification	Lloyd's Register of Shipping Specification EN 50081-2 and EN 50082-2

Compliance

CSA Certified	Class I, Division 2, Groups A, B, C, & D
American Bureau of Shipping (ABS)	2007 Steel Vessel Rules 1-1-4/7.7, 4-2-1/7.3, 4-2-1/7.5.1, 4-9-3/17, 4-9-7/13, 4-9-2/11.7 & 4-9-4/23 (Low Voltage Models only)
Bureau Veritas (BV)	Certified for Environmental Category EC Code: 33 Certified for use on AUT-UMS, AUT-CSS, AUT-PORT and AUT-IMS Classed Vessels
Det Norske Veritas (DNV)	Certified for Marine Applications, Temperature Class B, Humidity Class A, Vibration Class B, EMC Class A, and Enclosure Class B per DNV Rules for Ships Pt. 4, Ch. 9 Control and Monitoring Systems and Pt. 4, Ch.'s 2 & 3, Rotating Machinery
Germanischer Lloyd (GL)	Environmental Category C; EMC2 per Type Tests Part 2, Edition 2003: Regulations for the Use of Computer and Computer on Board
Lloyd's Register (LR)	LR Type Approval Test Specification No. 1:1996 for Environmental Categories ENV1, ENV2, and ENV3
Nippon Kaiji Kyokai (NKK)	Rules Ch. 1, Part 7, of Guidance for the approval and Type approval of materials and equipment for marine use and relevant Society's Rules. (Low Voltage Models only)
Registro Italiano Navale (RINA)	RINA Rules for the Classification of Ships – Part C Machinery, Systems and Fire Protection – Ch. 3, Sect. 6, Tab. 1
European Union (EU)	Compliant with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC

Hardware Manual	02877



723PLUS Digital Control Outline Drawing
(Do not use for construction)

WOODWARD

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Distributors & Service
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