

Centurion™ PLUS Full Featured Controller



The Centurion PLUS Controller is a custom programmable control and monitoring system. Primarily designed for engine driven compressors, the Centurion PLUS is well suited for many control applications, such as CNG control, Fire Pump Control, and many industrial control applications. Additionally, Murphy can custom design a control package to meet exact specifications for a variety of other applications.

The Centurion PLUS continuously monitors input signals and set points and commands outputs to maintain proper operation. When an out-of-limits event occurs, the controller will stop, shutdown, or control equipment to change conditions. The Auto-Start capabilities of the Centurion PLUS allow for start/stop based on parameters, such as pressure set points or by digital signals. The Centurion PLUS allows for customer valve logic sequencing, purge cycle control, and many other logic applications. The Centurion PLUS can also provide complex calculation abilities, such as rod load and temperature deviation.

The Centurion PLUS provides real-time data via communications ports to a connected display and/or supervisory system. This advanced system offers multiple options for remote communications and operation including HMI's, PLC's, PC's, and SCADA systems. The industry standard Modbus® RTU protocol means greater support for a wide variety of communication equipment, including radio and satellite communications systems. Other communication options include Modbus TCP/IP, web page hosting, and data logging captured in standard CSV files uploadable through USB port.

Features

- Custom programmed to meet exact application requirements
- Communications via 2 RS485/RS232 ports
- USB 1.1 support for laptops without a serial port
- Upload/download capabilities for setpoint edits
- Shutdown and alarm history, maintenance timers
- Complex valve logic and sequencing support
- PID Loops w/ overrides (multiple control loop possibilities)
- Expand I/O up to three (3) expansion modules, any combination
- Firmware stored in non-volatile flash memory
- Setpoints stored in non-volatile eeprom memory
- Approved Certification for Class 1, Division 2, Groups B, C, & D areas
- Expanded calculation abilities
 - Rod load equations
 - Lookup table support
 - Temperature channel deviation
- Expanded communication abilities
 - Modem dial in/dial out using terminal interfaces, Modbus RTU protocols
 - Remote monitoring and control via ethernet (several protocols supported including but not limited to Modbus TCP, TCP/IP Internet Web server)
 - Event driven email, SMS text messaging possible
 - Protocol conversion (many industry protocols supported)
 - Web page hosting
- Data logging
 - Using common compact flash card memory, 1 GB of storage
 - Trends data as well as capture of readings at time of fault
 - Security file logs all setpoint changes
 - Importable to CSV files
 - Multi-language support

Basic Components

The Centurion PLUS consists of a Display Module, a Main I/O Module, and optional Expansion I/O Modules. No special cables are required. The Centurion PLUS is designed for use within a weatherproof enclosure only.

Display Module (Head): Full color VGA 6" Touchscreen (Optional 10" available)

Main I/O Module: CPC4-1-A: 32 DI, 10 DO, 12 AI, 8 TC, 2 AO, 1 MPU

Expansion Modules:

MX4: 18 TC (Type J or K), 1 MPU

MX5: 24 DI, 8 DO, 10 AI, 1 MPU

MX5-A: Same I/O as MX5, additional 4 analog outputs

MX5-D: Same I/O as MX5, additional 8 digital outputs

DI= Digital Input; DO= Digital Output; AI= Analog Input; AO= Analog Output;
TC= Thermocouple Input; MPU= Magnetic Pick Up Input

General Specifications

Power Input: 10 -32 VDC

Operating Temp. (CPC4-1): -40 to 85°C (-40 to 185°F)

Operating Temp. (Touchscreen): 0 to 50°C (32 to 122°F)

Application Firmware: Programming Proprietary C Language - PC-based upload/download setpoint editor

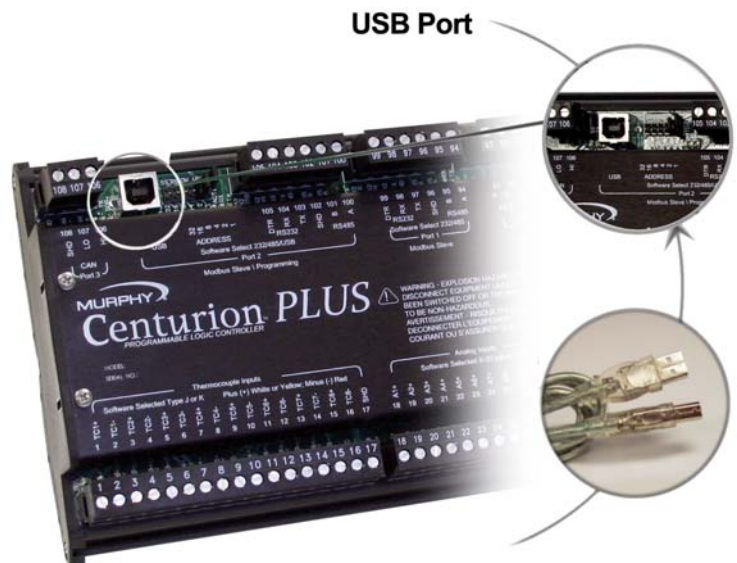
Full-Color VGA Touchscreen

- Full-Color VGA Touchscreen (Resistive Analog)
- 6" Standard offering, 10" upgrade
- Data logging - 1 GB memory card
- Data Log transfer "on the fly"
- Communications
 - Serial RS232 - 2
 - Serial RS485 - 1
 - USB 1.1 - 1
 - Ethernet (several protocols supported including, but not limited to Modbus TCP, TCP/IP Internet Web server)
- 5-Button keypad for on screen menus (6")
- 8-Button keypad for on-screen menus (10")
- Standard Screen offerings
- Front panel Power LED
- 24 VDC Powered



CPC4-1-A Main I/O Module

- All I/O options individually software selectable. No jumpers required
- 32 Optically-isolated DC Digital Inputs: NO or NC, (active high/active low), non-incendive
 - LED indicators
 - Approved for use with general purpose switches in hazardous areas
- 12 Analog Inputs: 4-20mA or 0-5V, 10 bit hardware
- 8 Thermocouples: Type J or K, 12 bit hardware
 - Open Thermocouple Detection: Drives channel reading high (max of scale)
 - Cold Junction Compensation
- 1 Magnetic Pickup Input/AC Run Signal: 30 to 10kHz, 5VAC rms min, 120VAC rms max
- 10 Digital Outputs:
 - LED indicators
 - Four (4) relay outputs, form C, dry contacts
 - Four (4) FET outputs (source)
 - Two (2) FET outputs (sink)
- 2 Analog Outputs
 - 4-20mA, 16 bit hardware
- 3 Communication Ports:
 - Port 1: Interface: RS232 or RS485
 - Protocol: Modbus RTU (Slave)
 - Port 2 (SERIAL):
 - Interface: RS232 or RS485
 - Protocol: Modbus RTU (Master or Slave), Proprietary (Firmware Transfer)



Port 2 (USB): Interface: USB 1.1 Compliant Port emulating RS232 communications via PC driver

- Protocol/Services: Modbus RTU (Slave), Proprietary (Firmware Transfer) Proprietary (Setpoint upload/down)
- Connection: USB Type B connector
- Automatic selection of USB when a signal is detected on the USB Type B connector

Port 3: Interface: CAN

- Protocol/Services: Proprietary communications for Expansion I/O Module support

Expansion I/O Modules

MX4 Expansion I/O Module

- All I/O options individually software selectable. No jumpers required
- 18 thermocouple inputs: Type J or K, 12 bit hardware
 - Open Thermocouple Detection: Drives channel reading high (max of scale)
 - Cold Junction Compensation
- 1 Magnetic Pickup Input: 4.5VAC–120VAC, 30–10kHz



MX5 Expansion I/O Module

- 24 Digital Inputs: Optically-isolated DC Digital Inputs, (active high/active low), non-incendive
- 10 Analog Inputs: 4–20mA or 0–5VDC, 10 bit hardware
- 8 Digital Outputs: Open Collector Transistor. 150mA (sink)
- 1 Magnetic Pickup Input: 4.5VAC–120VAC, 30–10kHz

MX5-A Expansion I/O Module—Analog Output Option

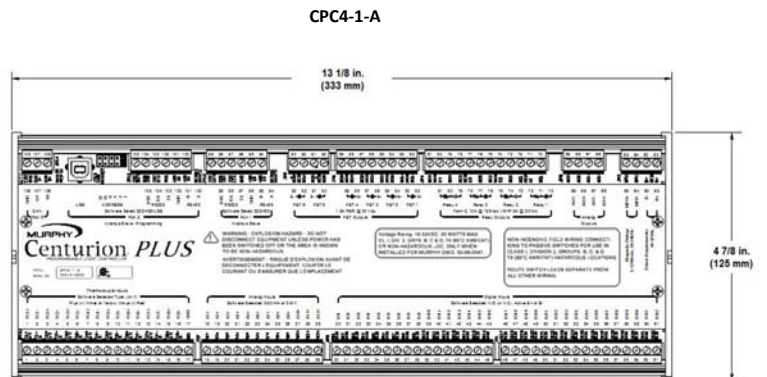
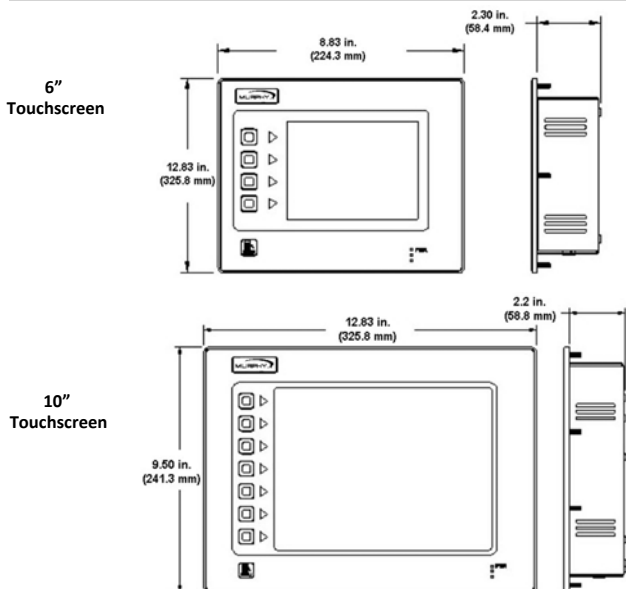
- 24 Digital Inputs: Optically-isolated DC Digital Inputs, (active high/active low) non-incendive
- 10 Analog Inputs: 4–20mA or 0–5VDC, 10 bit hardware
- 8 Digital Outputs: Open Collector Transistor. 150mA (sink)
- 4 Analog Outputs: 4–20mA, 16 bit hardware
- 1 Magnetic Pickup Input: 4.5VAC–120VAC, 30–10kHz



MX5-D Expansion I/O Module—Analog Output Option

- 24 Digital Inputs: Optically-isolated DC Digital Inputs, (active high/active low) non-incendive
- 10 Analog Inputs: 4–20mA or 0–5VDC, 10 bit hardware
- 16 Digital Outputs: Open Collector Transistor. 150mA (sink)
- 1 Magnetic Pickup Input: 4.5VAC–120VAC, 30–10kHz

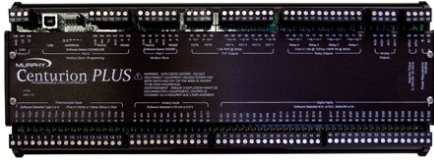
Dimensions



How To Order

Selecting a Centurion *PLUS* Controller Model:

1. Specify **CPC4-1-A** Main I/O Module



2. Specify any combination up to three (3) (optional) Expansion I/O Modules

**MX4
MX5
MX5-A
&/or
MX5-D**



3. Specify one 6-inch or 10-inch (upgrade) VGA Color Touchscreen



The minimum system requirements:

CPC4-1-A Main I/O Module

Full-color VGA Touchscreen (for operation control and interface with Main I/O Module)

Some systems may require the use of our **Interchange™ Comm Control Module, MX-Series Expansion I/O**. Chose up to three (3) of any combination.

Replacement Parts and Accessories

CPC4-1-A Plug Kit (00030866)	Printed Replacement Terminal Plugs for Centurion <i>PLUS</i> (CPC4-1-A) Main I/O Module
Choke (50000774)	Ignition Noise (Choke) Filter
MX4 Plug Kit (00030867)	Printed Replacement Terminal Plugs for MX4 Expansion I/O Module
MX5 Plug Kit (00030868)	Printed Replacement Terminal Plugs for MX5 Expansion I/O Module

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