

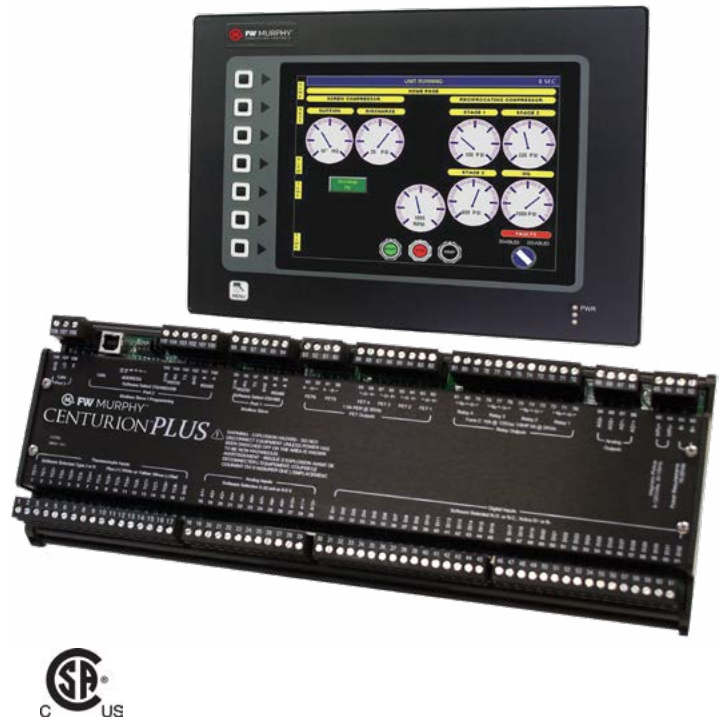
Centurion PLUS™ Full-Featured Controller

The Centurion PLUS Full-Featured Controller is a control and monitoring system. Primarily designed for engine/electric motor-driven compressors, the Centurion is well suited for many control applications using standard configurations to save money and reduce training. Additionally, FW Murphy can custom design a control package to meet exact specifications for a variety of 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, shut down 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 provides real-time data via communication ports to a connected display and/or supervisory system. This advanced system offers multiple options for remote communications and operation including HMIs, PLCs, PCs 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.



Features

Features of the Centurion PLUS:

- 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 set point edits
- Shut-down 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 expansion

- modules, any combination
- Firmware stored in non-volatile flash memory
- Set points stored in non-volatile eeprom memory
- Approved Certification for Class 1, Division 2, Groups B, C & D areas

Expanded calculation abilities

- Custom rod load equations
- Look up 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, 2 GB of storage
- Trends data as well as capture of readings at time of fault
- Security file logs all set point changes
 - Importable to CSV files
 - Multi-language support

Basic Components

The Centurion consists of a display module, a main I/O module and up to 3 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):

- Choose from
- Standard MV-3-C LCD with graphic display
- Standard full-color VGA 6 in. or 10 in. touchscreen

Main I/O Module:

CPC4-1-A: 32 DI, 10 DO, 12 AI, 8 TC, 2 AO, 1 MPU

Expansion Module: MX4: 18 TC (Type J or K). MX5: 24 DI, 8 DO, 10 AI, 1 MPU.

MX5-A: 8 DO, 10 AI, 4 AO, 1 MPU. 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

In order to consistently bring you the highest quality, full-featured products, we reserve the right to change our specifications and designs at any time.

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Controller

Power Input: 10 -32 VDC

Operating Temp:

-40° to 185° F (-40° to 85° C)

MV-3-C Display Module with Graphical LCD

- Operating temperature: -40° to 185° F (-40° to 85° C)
- 320x240 pixels, LCD display with backlight
- 12-key keypad for user interface for set point entry, alarm acknowledgment, start, stop, reset, etc.
- Communications
 - RS232/RS485-1 (MODBUS RTU master)
 - RS485-2 (MODBUS RTU slave)
 - USB 1.1 compliant ports
 - Type A (reserved)
 - Type B (firmware updates)
 - CAN 1/2 (reserved)
- Customizable process screens
 - Line by line
 - Gauge
 - Control loop
 - Generic register



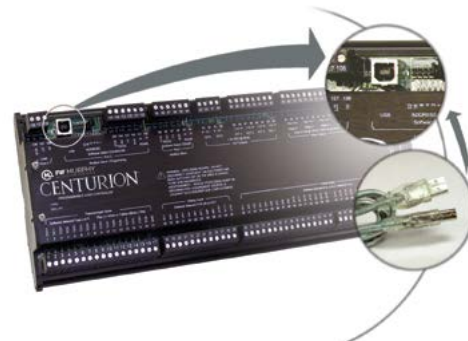
Full-Color VGA Touch Screen

- Operating temperature: 32 to 122° F (0 to 50° C)
- Full-color VGA touch screen (resistive analog)
- 6" standard offering, 10" upgrade
- Data logging - 2 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)
- Five-button keypad for on screen menus (6")
- Eight-button keypad for on-screen menus (10")
- Standard screen offerings
- Front panel power LED
- 24 VDC powered



CPC4-1-A Main I/O Module

- Application Firmware: Programming proprietary C Language; PC-based upload/download set point editor
- 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: 0-24 mA or 0-5 VDC , 10 bit hardware
- 8 thermocouples
 - Open thermocouple
 - Cold junction compensation
- 1 magnetic pickup input/AC run signal: 30 to 10 kHz, 4.5 VAC rms min, 120 VAC rms max.
- 10 digital outputs:
 - LED indicators
 - 4 relay outputs, form C, dry contacts
 - 4 FET outputs (source)
 - 2 FET outputs (sink)
- 2 analog outputs
 - 4-20 mA, 16 bit hardware
- 3 Communication Ports:
 - Port 1 (SERIAL):
 - Interface: RS232 or RS485
 - Protocol: MODBUS RTU (slave)



- Port 2 (SERIAL):
 - Interface: RS232 or RS485
 - Protocol: MODBUS RTU (slave), proprietary (configuration transfer)
- Port 2 (USB): Interface: USB 1.1 compliant port emulating RS232 communications via PC driver
 - Protocol/Services: MODBUS RTU (slave), proprietary (configuration transfer)
 - Connection: USB Type B connector
 - Automatic selection of USB when a signal is detected on the USB Type B connector
- Port 3: Interface: CAN bus
 - 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: 4.5 VAC–120 VAC, 30–10kHz



MX5 Expansion I/O Module

- 24 Digital Inputs: optically isolated DC digital inputs, (active high/ active low) non-incendive
- 10 analog inputs: 0–20 mA or 0–5 VDC, 10-bit hardware
- 8 digital outputs: open collector transistor. 150 mA (sink)
- 1 magnetic pickup input: 4.5 VAC–120 VAC, 30–10 kHz



MX5-A Expansion I/O Module

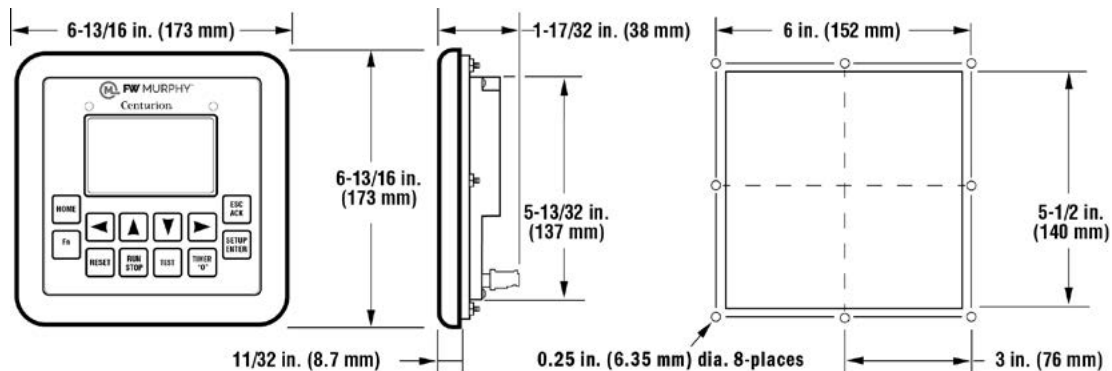
- 24 Digital Inputs: optically isolated DC digital inputs, (active high/ active low) non-incendive
- 10 analog inputs: 0–24 mA or 0–5 VDC, 10-bit hardware
- 8 digital outputs: open collector transistor, 150 mA (sink)
- 4 analog outputs: 4–20 mA, 16-bit hardware
- 1 magnetic pickup input: 4.5 VAC–120 VAC, 30–10 kHz

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

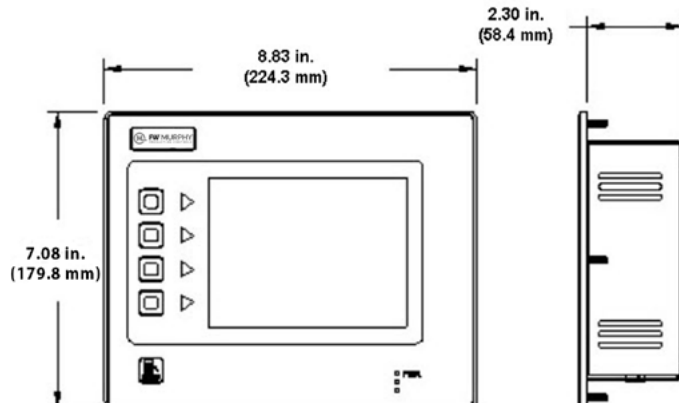
- 24 digital inputs: optically isolated DC digital inputs, (active high/active low) non-incendive
- 10 analog inputs: 0–20 mA or 0–5 VDC, 10-bit hardware
- 16 digital outputs: open collector transistor. 150 mA (sink)
- 1 magnetic pickup input: 4.5 VAC–120 VAC, 30–10 kHz

Dimensions

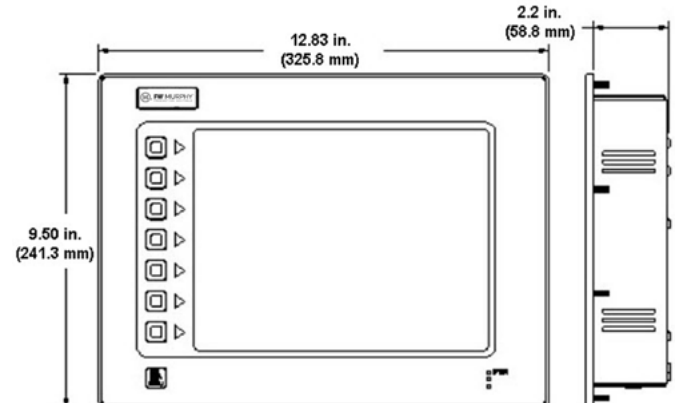
MV-3-C



6-Inch VGA Touch Screen

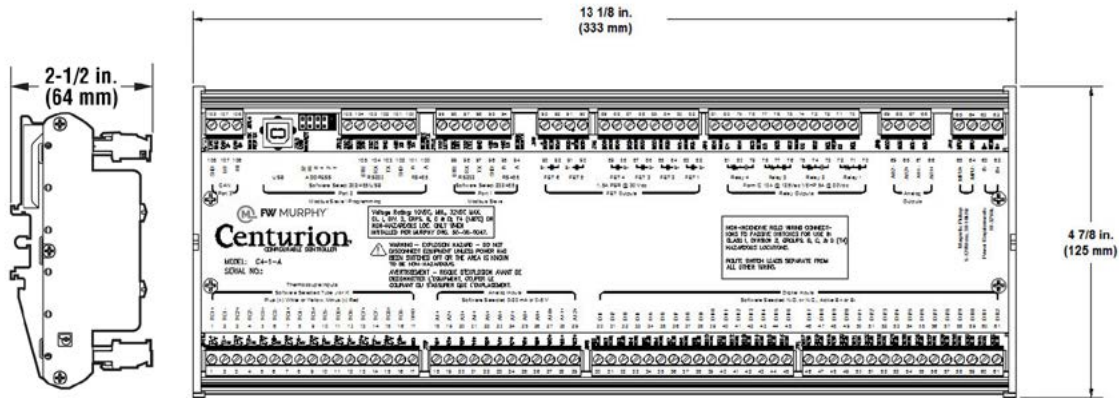


10-Inch VGA Touch Screen



Dimensions - continued

CPC4-1-A



How to Order

Select a Centurion Configurable Controller.
CPC4-1-A

Specify any combination up to three Expansion I/O Modules.
MX4, MX5, MX5-A, MX5-D

Specify One Display.
MV-3-C LCD
6-inch VGA Touch Screen
10-inch VGA Touch Screen

The minimum system requirements:
CPC4-1-A Main I/O Module
Display capable of MODBUS communications

The FW Murphy MV-3-C Display Module is a highly integrated HMI for use with the Centurion system and is recommended for most customers.

Some systems may require additional I/O which is available on the MX4 or MX5-A expansion I/O modules.

Part Number	Description	Notes
Specify Model	CPC4-1-A, Centurion Controller	
	MV-3-C, Monochrome display	
	6-inch VGA touch screen	
	10-inch VGA touch screen	
	MX4 expansion I/O module	
	MX5-A expansion I/O module	
50000774	Ignition noise (choke) filter	
00030866	CPC4-1-A Plug kit	Printed replacement terminal plugs for main I/O module
00030867	MX4 Plug kit	Printed replacement terminal plugs for MX4 expansion I/O module
00030868	MX5 Plug kit	Printed replacement terminal plugs for MX5 expansion I/O module