

Centurion™ Configurable Controller – C4 Series



The C4 Series Centurion Configurable 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, Enovation Controls can custom design a control package to meet exact specifications for a variety of applications.

The Centurion 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 allow for start/stop based on parameters such as pressure set points or by digital signals.

The Centurion 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

- Fully configurable control and monitoring system. Applications include reciprocating / screw compressors and pump systems.
- System is expandable to meet most three-stage compressor applications.
- User-configurable with Windows®-based software. Allows the operator to point and click to implement standard processes. All I/O points can be custom configured.
- No programming experience required.
- Local and remote communications, Modbus® RTU via RS485/232.
- USB 1.1 support for laptops without a serial port.
- Upload / Download capabilities for configurations and set points.
- Approved Certification for Class I, Division 2, Groups B, C & D areas.
- Shutdown history list (Last 20 events)
- Event history list (Last 32 events)
- Active alarm list
- 10 maintenance timers
- Run hourmeter
- Support for No-Flow Totalization
- Number of starts per hour (electric motor)
- 6 PID loops w/ override (up to three each)
- Configuration templates provided for simple user configuration
- Configurations stored in non-volatile flash memory
- Set points stored in non-volatile EEPROM memory

Basic Components

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

- **Display Module (Head):** MV-3-C: LCD Graphic Display.
- **Main I/O Module:** C4-1-A: 32 DI, 10 DO, 12 AI, 8 TC, 2 AO, 1 MPU.
- **Expansion Module:** MX4: 18 TC (Type J or K). MX5-A: 6 DO, 8 AI, 4 AO, 1 MPU.

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

C4 Series General Specifications

Power Input: 10 -32 VDC

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

Configuration: PC-based Centurion Configuration Software.

* Modbus is a registered trademark of its respective owner and is not affiliated with Enovation Controls.

MV-3-C Display Module with Graphical LCD

- Operating temperature: -40 to 185°F (-40 to +85°C)
- 128x64 pixels, LCD display with backlight
- 12-key keypad for user interface for set point entry, alarm acknowledgement, start, stop, reset, etc.
- Communications
 - RS232 / RS485-1 (Modbus Master)
 - RS485-2 (Reserved)
 - USB 1.1 Compliant Ports
 - Type A (Reserved)
 - Type B (Firmware Updates)
 - CAN 1/2 (Reserved)
- Customizable Process Screens (up to 9)
 - Line by Line
 - Gauge
 - Control Loop
 - Generic Register



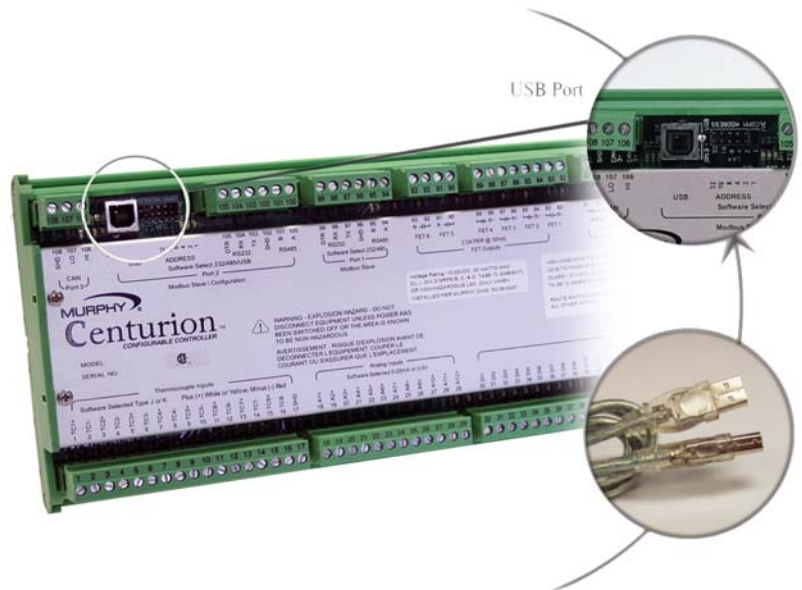
ENGINE SPEED	1140 RPM
ENGINE OIL PRESS.	47PSI
INTAKE MFD PRESS.	7.5 "HG
JKT WTR TEMP	130°F
AUX WTR TEMP	92°F
REMOTE WARMUP	0000.3 H B2 TIME=140

OIL PRS	42 PSI	WTR TEMP	145 °F
BATTERY	13.7 VDC	ENG SPEED	1250 RPM
REMOTE WARMUP	0000.5H	B2 TIME=140	

SETPPOINT	75 PSI
LINE PRESSURE	75% 65 PSI
CONTROL OUTPUT	80%
TIMER WARMUP	0000.3H B2 TIME=140

C4-1-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: 0-24mA or 0-5VDC , 10 bit hardware
- 8 Thermocouples
 - Open Thermocouple
 - Cold Junction Compensation
- 1 Magnetic Pickup Input/AC Run Signal: 30 to 10kHz, 4.5VAC rms min, 120VAC 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
 - 4-20mA, 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: CANBUS
 - 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 – 120 VAC, 30 – 10kHz



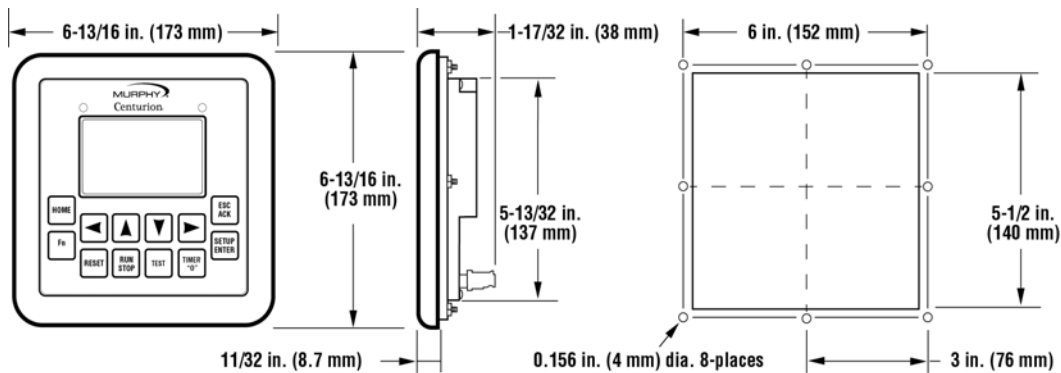
MX5-A Expansion I/O Module

- 8 Analog Inputs: 0-24mA or 0-5VDC, 10 bit hardware
- 6 Digital Outputs: Open Collector Transistor, 150mA (sink)
- 4 Analog Outputs: 4-20mA, 16 bit hardware
- 1 Magnetic Pickup Input: 4.5VAC – 120 VAC, 30 – 10kHz

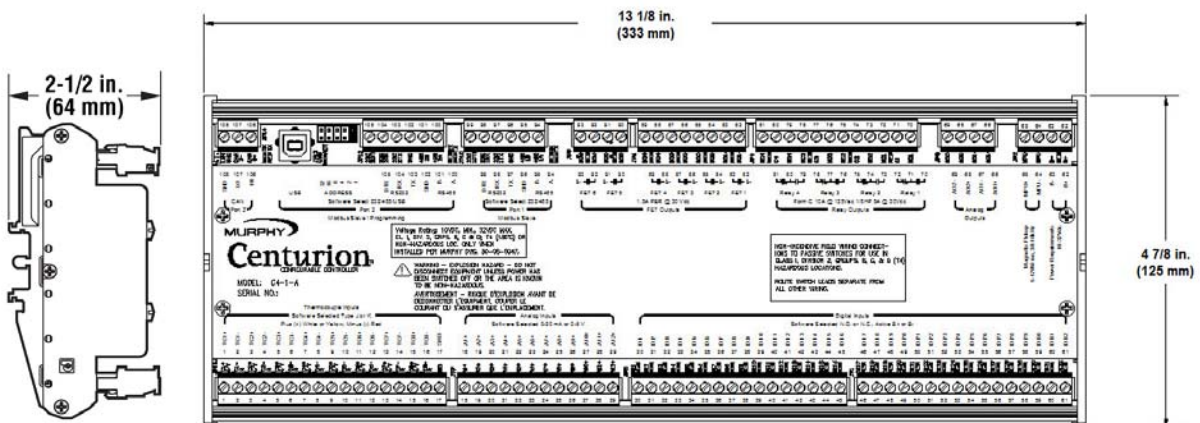


Dimensions

MV-3-C



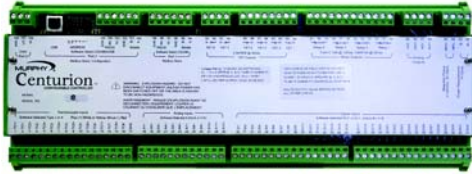
C4-1-A



How To Order

Selecting a Centurion Configurable Controller C4 Series Model:

1. Specify **C4-1-A** Main I/O Module



2. Specify one (optional) Expansion I/O Module

**MX4
or
MX5-A**



3. Specify one (optional) **MV-3-C** Display Module



The minimum system requirements:
C4-1-A Main I/O Module
Display capable of Modbus communications

The 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.

Accessories

Configuration Software

MurphyNET Configuration Suite - Centurion configuration tool for modifying sequence of operation, set points, timers, faults and †displays for Centurion. Includes file transfer utilities for configuration and firmware upgrades.

Replacement Parts and Accessories

C4-1-A Plug Kit	(00000504)	Printed Replacement Terminal Plugs for Centurion (C4-1-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
Centurion Configuration Tool (50702313)		Configuration tool for user application setup

† Display configuration and other settings for display are only for use with the MV-3-C Display Module.

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