

EC 3000

Embedded System Controller

DESCRIPTION

The EC 3000 is an embedded system controller designed to direct the operation of automated machinery. When programmed with an operating sequence, the microcomputer-based technology of the EC 3000 provides flexible and accurate control of a wide variety of industrial processes. Installation is uncomplicated and easily tailored to different applications. Using the graphical user interface (GUI), the program can easily be configured to meet specific system requirements.

The EC 3000 incorporates many selectable features designed to make operation of the controller both easy and accurate. These functions are selected using a menu-driven protocol presented on the front panel display.

Provision for process parameter entry and data monitoring are conveniently available through the front panel push-button keyboard. Process data, system status and error messages are shown on the front panel display. The status of the controller, including the state of the eight inputs and sixteen outputs, is indicated either on the display or on annunciation indicators.

Three serial data communication ports are included as standard features. An RS-232 port is available to drive the optional printer. A second RS-232 port is available to drive an optional remote display. An Ethernet port is available to provide computer compatible data from the factory floor.

The module is designed to be mounted inside a variety of NEMA style enclosures.



BENEFITS

Configurable – The EC 3000 is a general purpose embedded system controller which can be programmed to provide accurate control of industrial processes.

Flexible – Installation and set-up is easily accomplished for a variety of related industrial systems. One control program can be designed to serve the needs of a family of similar processes

This controller design is the latest in a family of products proven in the field through years of production service in the harshest of environments.

The single module is surrounded by a steel case enclosure to prevent contamination in hostile environments. All terminations to the controller are made using the supplied interface cable set.

Universal – The EC 3000 has been successfully incorporated into systems manufactured by a wide range of equipment providers.

Reliable – The EC 3000 is reliable in harsh environments. The surrounding enclosure prevents contamination in dirty environments, while the signal filtering design prevents disruption from electrical noise.

Simple to Use – Process parameters are easy to program using the front panel keyboard.

Keyboard – The keyboard features 32 integrated push-buttons with tactile feedback for confident operation. The graphics are printed on the back of the non-glare surface to protect from scratching and wear. The overlay may be modified to comply with specific system or process requirements.

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SPECIFICATION

Display:

Type: Dot matrix, high visibility, vacuum fluorescent, alpha-numeric.

Format: Two lines by sixteen characters.

Zero Blanking: Leading zero suppression provided.

Under Zero Indication: Minus sign at left of data display.

Status Annunciator: System status messages appear in the display.

Process Annunciators: The status of each of the eight inputs and sixteen outputs is indicated by single point LED annunciators.

Digital Input: Eight inputs are available. Input function is defined by the application software. The standard input accepts 60 - 230 Vac signals. Other input specifications are available upon request.

Digital Output: Sixteen outputs are available. Output function is defined by the application software. The standard output controls 115 - 230 Vac at up to 1 Amp. Other output specifications are available upon request.

Analog Input

Excitation to the load cell is provided by an internal 5 Vac power supply with floating output capable of driving up to four 350-ohm load cells in parallel; short circuit proof; remote sensing standard. Other types of inputs are available upon request.

Analog Conversion

The load cell is monitored by an analog-to-digital converter incorporating a high gain amplifier and low pass signal filter implemented in digital signal processing hardware and software. Care is taken with the design to ensure weight accuracy.

Internal Resolution

The analog conversion system is designed to meet standards for commercial scales. The internal resolution after software manipulation is greater than 65,000 counts.

Calibration

Zero and Span: An automated calibration protocol is provided. When selected from the keyboard, the operator is directed by displayed messages to enter calibration weight data. Both zero and span adjustment are performed automatically.

EMI / RFI Suppression

Hardware and software filtering for rejection of mechanical and electrical interference.

Power Requirements

Input Voltage — 115 - 230 Vac.

Frequency — 50 / 60 Hz.

Power — 10 watts, maximum, not including output load currents.

Environmental

Temperature Range:

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

Storage: -20°C to 80°C (-5°F to 176°F)

Humidity: 95% RH, non-condensing

Physical

Size: 12" W x 7" H x 2" D

(305 mm x 180 mm x 50 mm)

Mounting:

Screw pattern around front panel.

Termination:

Interface cable connectors located on bottom edge of housing

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