

FAC-2000 SERIES FEATURES:

- Aluminum/steel construction—fully sealed enclosure
- -20°C to +65°C (-4°F to +149°F) operating range
- Meets MIL-STD-901D for high impact shock
- Meets MIL-STD-167B for vibration
- Large array of I/O connections
- RS-232 and RS-485 networking support
- Prominent displays and intuitive user-interface
- Versatile and easy-to-use graphical programming environment (*Design Pad* software package)
- Available with mil-spec miniature cylindrical connectors



PRODUCT DESCRIPTION

The Fairmount Automation Controller Series, Model 2000 (*FAC-2000™*) is a general-purpose, highly configurable, multi-loop process controller. Its aluminum-steel construction makes the controller extremely rugged—it is specifically designed for operation in environments susceptible to extreme shock, vibration, temperature, humidity, pollution, corrosion, and/or dirt and grit.

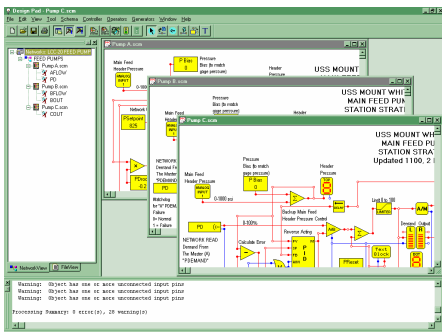
The *FAC-2000* digital process controller is equipped with a large array of I/O capabilities. It combines the analog functionality of a standard process controller, with the digital functionality normally associated with Programmable Logic Controllers (PLC). In its standard configuration, the *FAC-2000* has three analog inputs, two analog outputs, two universal digital inputs, eight standard digital inputs, two digital outputs, and two form-C relays, and three solid-state relays.

The *FAC-2000* controller is also equipped with two communication channels to support RS-232 and RS-485 networking using the FAIRNET protocol. Controllers can share information at speeds up to 115 kbps. They can also communicate with third-party HMI packages (running on standard PCs) using an OPC server interface.

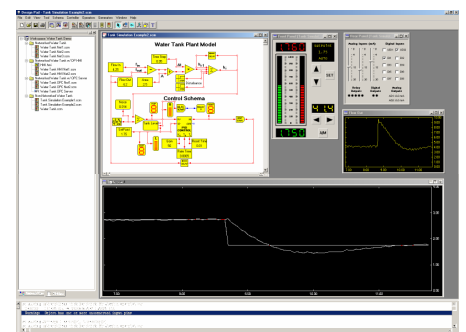
The digital technology used to build the *FAC-2000*, in combination with Fairmount Automation's *Design Pad™* software package, makes the *FAC-2000* extremely easy to program and very versatile. Programming the device entails "drawing" a desired control scheme using a vast array of operator functions. These operator functions are wired together to indicate the signal flows from device inputs to device outputs. *Design Pad* supports well over 60 operators, including

- Logic Functions (e.g., NAND gate, XOR gate, RS flip flop)
- General Purpose Operators (e.g., timer, ramp profile, multiplexer, A/B switch)
- Hardware Operators (e.g., analog input, bargraph display, A/M button)
- Networking Operators (e.g., broadcast, receiver, parameter synchronization)

Design Pad is not only a design tool. It can also serve as a powerful simulation tool. After a design is completed, *Design Pad* offers the ability to simulate the control scheme and model a process, graph any signal in the circuit, and interact with computer-generated *FAC-2000* front panels and rear-panels. *Design Pad* also offers controller network simulations (i.e., concurrent simulation of multiple networked control stations).



- Controller Blocks (e.g., PID controller, lead-lag controller)
- Signal Conditioning Functions (e.g., characterizer, rate limiter, track & hold)
- Signal Comparator Blocks (e.g., high/low alarm, equality, less or equal)
- Mathematical Operators (e.g., addition, multiplication, natural logarithm)



Digital Process Controllers for Extreme Environments



ENVIRONMENTAL CHARACTERISTICS

Operating Ambient Temperature Range.....	-20 °C to 65 °C
Storage/Transport Ambient Temperature Range.....	-40 °C to 85 °C
High Impact Shock.....	MIL-STD-901D
Mechanical Vibration.....	MIL-STD-167B
Facial Protection.....	NEMA 4 (pending)
Housing Protection.....	NEMA 4 (pending)

ELECTRICAL CHARACTERISTICS

Voltage range (DC power models).....	18 to 36 VDC
Voltage range (AC power models).....	90 to 132 VAC or 180 to 250 VAC
Frequency range (AC power models).....	47 to 63 Hz (47 to 440 Hz models also available)
Maximum power consumption.....	25 Watts (excluding aux. DC output)
Aux. DC output voltage range.....	28 VDC standard (factory adjustable from 14 to 30 VDC)
Aux. DC output maximum power.....	25 Watts
Analog input 1-3 rated signal range.....	3 to 20.8 mA or 0.75 to 5.2 VDC
Analog input 1-3 impedance.....	250 or 750K ohms (user selectable)
Analog input 1-3 resolution.....	12 bits minimum
Digital input 1-8 signal low voltage.....	0 to 1.5 VDC
Digital input 1-8 signal high voltage.....	9.1 to 128 VDC
Universal digital input 1-2 signal low voltage.....	0 to 0.8 VDC
Universal digital input 1-2 signal high voltage.....	4.5 to 30 VDC
Analog output 1-2 rated signal range.....	0 to 20.5 mA
Analog output 1-2 voltage range.....	4 to 32 VDC
Analog output 1-2 load range.....	0 to 1400 ohms
Analog output resolution.....	12 bits
Digital output 1-2 rated signal range (current).....	25 mA typical
Digital output 1-2 rated signal range (voltage).....	30 VDC
Relay 1-4 type.....	Form C (N.O., COMM, N.C.)
Relay 1-4 maximum rated signal range.....	4 A (resistive) @24 VDC or 120 VAC, 2 A(resistive) @240 VAC
Solid State Relay 1-3 type.....	Form A (N.O., COMM)
Solid State Relay 1-3 maximum rated signal range.....	3 A @60 VDC or 140 VAC
Point-to-point network support.....	RS-232 (maximum of 2 devices)
Multi-drop network support.....	RS-485 (maximum of 32 devices)

PHYSICAL CHARACTERISTICS

Weight.....	Approximately 9 pounds
Front panel dimensions.....	5.5" x 7.0"
Depth (w/o cylindrical connector shells).....	7.75"
Display element types.....	Yellow, green, and red LEDs (all display colors are user-specified)
Digital readouts.....	Two 4-digit and one 3-digit, 7-segment digital readouts (0.4" x 0.3")
Analog bargraphs.....	Two columns of 40 LEDs (4.0" x 0.2")
Alpha-numeric displays.....	Three rows with 8 characters each (7x5 pixel resolution)
Keypad.....	Six positive tactile-feel keys

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