GE Fanuc
Embedded Systems

# RIU-2000

## Rugged Remote Interface Unit

**Features**

- Less than 105 cubic inches.
- Designed for use in harsh vibration, shock, and EMI environments
- Operating/storage temperature: -40°C to 85°C
- Compartmentalized component placement
- Daughter cards allow for flexibility and custom I/O
- Easily adapts to changes in program requirements
- Versatile precision analog inputs and outputs
- Highly flexible discrete inputs and outputs
- Two 10/100BaseT Ethernet interfaces
- 64 Mbyte of Flash memory
- 128 Mbyte of DDR SDRAM
- 13-pin power supply connector

RIU-2000 is a rugged general purpose Remote Interface Unit originally developed for Vehicle Management Systems applications. It represents a true COTS answer to the challenge of providing low-cost, high density interfacing within an integrated system architecture where interface flexibility, physical robustness, power, weight, and space are critical considerations.

This conduction cooled Remote Interface Unit provides two 10/100BaseT Ethernet interfaces, 64 Mbyte of Flash memory, 128 Mbyte of DDR SDRAM with provision for expansion up to 1 Gbyte of DDR SDRAM, and a 13-pin power supply connector for external connection.

Pins are provided for expansion to two 10/100/1000B Ethernet ports and the mother-board and daughter cards are JTAG compatible for testability and programmability.

The RIU-2000 supports different bus interface daughter cards and a custom expansion I/O daughter card. This highly flexible system architecture makes it possible to easily adapt the RIU to changing requirements in real time. Other control and I/O interfaces are available upon request.

The RIU-2000's power supply operates with a 28V input in accordance with MIL-STD-704E (40V maximum). The unit's output voltages are filtered 28V, regulated 3.3V, regulated ±5V, regulated ±12V. Other required voltages will be provided from local LDO voltage regulators.

For maximum ease during the system integration process, the RIU features an extremely rich and versatile array of I/O that you can use to monitor and control many types of peripheral devices. Analog inputs can be used as differential or single-ended and configurable for either bipolar or unipolar voltages.

In addition to software filtering and averaging functions, each analog input has a selectable gain and voltage range. Analog outputs generate programmable, highly stable and accurate voltages ranging from -10 to +10V.

Discrete outputs can be configured as Open/Ground, Open/28V or Source Output. Discrete inputs can be set up for source at a voltage level of +28V. In addition, they feature debouncing circuitry to prevent short pulses from adversely affecting operation.

Frequency inputs can be used as event counters or speed sensors, incrementing each time a pulse is detected. Bidirectional TTL circuitry on each channel can be configured as either input or output. Reference voltage outputs generate fixed stable and accurate ±10 volt supplies.

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# RUI-2000 Rugged Remote Interface Unit

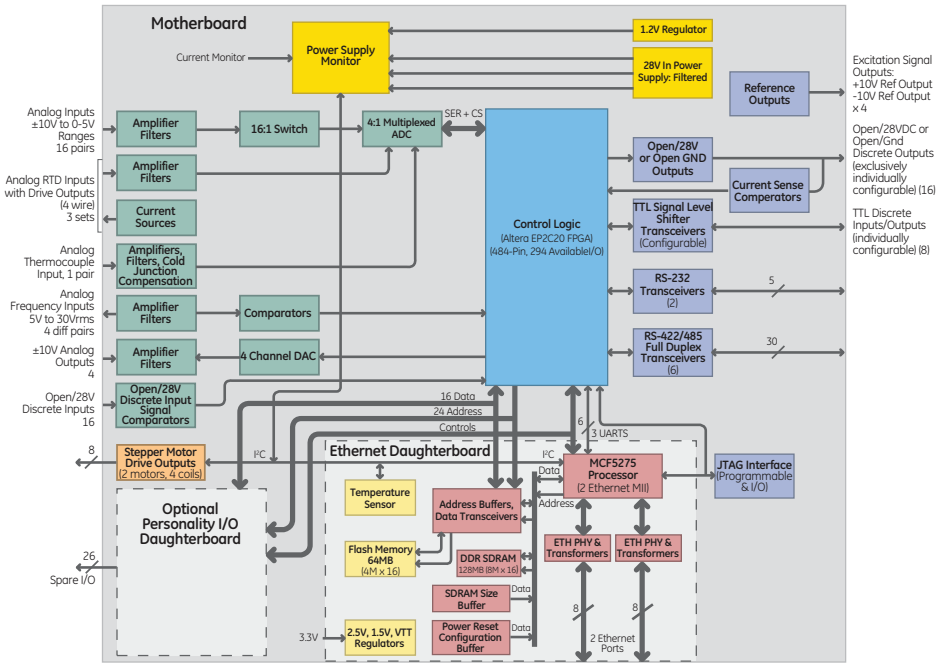
## Specifications

- Less than 105 cubic inches.
- 3.0 pounds (1.4 kg) approximately
- Designed for use in harsh vibration, shock, and EMI environments
- Milled aluminum alloy (6061-T6) chassis
- Compartmentalized component placement
- Daughter cards allow for flexibility and custom I/O
- Easily adapts to changes in program requirements
- Versatile precision analog inputs and outputs
- Highly flexible discrete inputs and outputs
- Current source outputs for RTD excitation
- Fixed reference voltage outputs
- Frequency inputs

### I/O

- 16 analog inputs (-10 to +10V)
- Four pulse counter (freq) inputs
- Three RTD analog inputs (4-wire)
- One thermocouple analog input
- 16 open/28V discrete inputs
- Eight TTL discrete inputs/outputs
- Four analog outputs (-10V to +10V)
- 16 open/28V discrete outputs or 16 open/GND discrete outputs
- Four +10V excitation signals
- Four -10V excitation signals
- Four stepper motor drive outputs
- Six RS-422/485 5-wire I/Os
- Two RS-232 I/Os
- Two 10/100BaseT Ethernet Ports
- One JTAG
- Ethernet control interface
- Other control and I/O functionality available via different daughter cards
- Conduction cooled
- 14 W, 28 V nominal
- Average consumption 21 W
- Up to 50 ms hold up on request
- Over voltage, over current and inrush protection
- Voltage and current monitors
- Optional IEEE-1394B, A429, or MIL-STD 1553
- Highly flexible software architecture
- Operating/storage: -40°C to 85°C

## Block Diagram




## Ordering Information

**RIU-2000**
Please contact GE Fanuc Embedded Systems for ordering information.

## About GE Fanuc Embedded Systems

GE Fanuc Embedded Systems is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Embedded Systems has the breadth, experience and 24/7 support to deliver what you need. For more information, visit www.gefanucembedded.com.

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## Additional Resources

For more information, please visit the GE Fanuc Embedded Systems web site at:

www.gefanucembedded.com