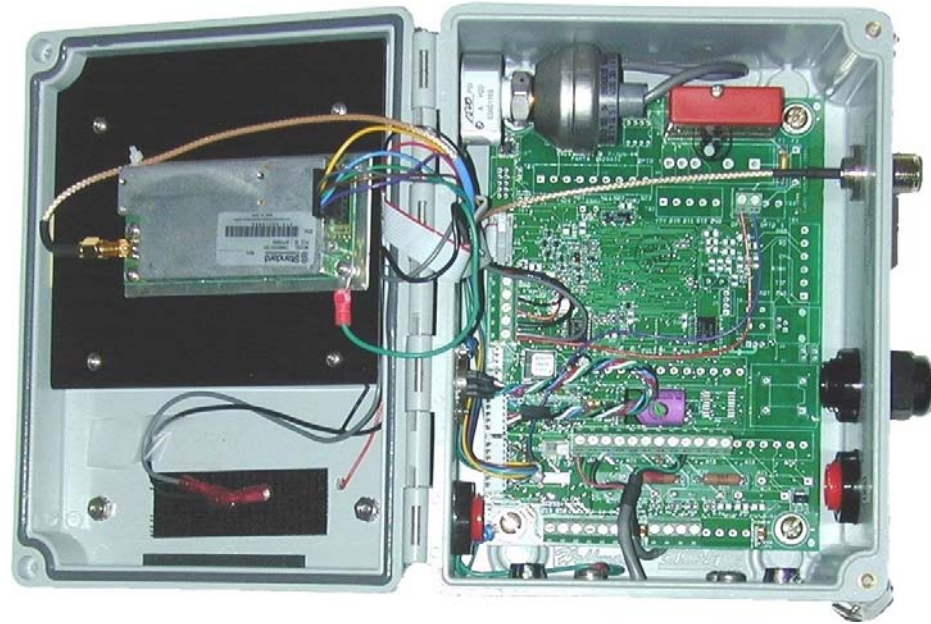


XARTU/1 Interior View Single Pressure with Microburst (Internet) Communications



XARTU/1 Interior View Dual Pressure with Cellular Communications (Analog/GSM/GPRS/CDMA)



EAGLE RESEARCH CORPORATION

Product Information

PRODUCT DATA

Real Time Pressure Monitor—RtPM™

Product Features

- ◇ Low-Power CMOS Design
- ◇ Compact, Rugged, and Reliable
- ◇ Flexible Communications Options
- ◇ Uninterruptible Power Supply
- ◇ Diverse I/O
- ◇ Multitasking Operating System
- ◇ Full Remote Monitoring and Control
- ◇ Local and/or Remote Data Collection
- ◇ Two-way Calling - Call in on Alarm and/or Call in on Periodic Intervals
- ◇ UL and ULC Approvals (pending)
- ◇ Class 1, Div 2 Classified
- ◇ Up to three internal pressure transmitters



Product Description

The XARTU/1 Real time Pressure Monitor (RtPM™) is a low-cost version of the XA Series™ family of products. It is an intelligent, compact, rugged, and reliable industrial computer designed for real-time remote data acquisition and control applications. It can execute multiple processes, including tasks such as complex math functions, control algorithms, etc., without host intervention.

Flexibility and reliability were the major factors in the RtPM™ design philosophy. It is a balanced system featuring flexible memory, I/O, power, and communication schemes including support for HEXASCII, MODBUS, and various other custom protocols upon request. The RtPM™ is capable of supporting virtually all of the popular communications devices including dial-up, cellular, CDPD, satellite, lease line modems and others.

A harsh environment tolerance is another of the RtPM™ strengths. The operating temperature can range from -40°C to 70°C, and the RtPM comes in a fiberglass NEMA 4X enclosure. This allows the RTU to exist where the work must be done, eliminating costly signal conditioning or expensive long sensor runs.

The optional operator interface is a two-line, 32-character liquid crystal display, and 25-key keypad with 10 user-definable function keys. This allows users to examine and/or change process data and diagnose problems at the remote site without a local host or terminal. This functionality can also be duplicated on a laptop computer hooked to the RtPM™ in a Windows® 98/2000/NT/XP environment with a product called Virtual Keypad developed by Eagle Research. The RtPM™ can store up to 32,000 historical records that are configurable by the end user. External display with a magnetically operated scroll switch permits viewing of critical parameters and alarm acknowledgement without opening the case.

FAST™ Fast Analog Sampling allows user selectable (1 Hz) sampling rates with min/max set-point violation alarms. This allows the unit to work with batteries and/or as a small solar panel powered system. It also permits highly accurate monitoring of pressure deviations in the pipeline.

Reliability

- ◇ The RtPM™ is ruggedly built to perform in a variety of industrial environments. Care is taken to maximize reliability by using a urethane conformal coating on all circuit boards, utilizing a hermetically sealed optional keypad and display. The NEMA 4X compression-formed, fiberglass-reinforced nylon enclosure packaging makes the unit ideal for demanding outside locations. Operating Temperatures from -40°C to +70°C (-40°F to +158°F).

Memory

The RtPM™ has a minimum of 512K X 8 RAM for data and 512K X 8 Flash memory allowing easy upgrade of run-time code. With the large memory capacity, a minimum of 32,000 historical inputs with time and date stamp can be stored. You can define data type and collection period with Eagle Research's software.

Communications

One modem port and one RS-232C serial port for hand held data collector/PC are standard. Available communications options are:

- ◇ Internal 2400 baud modem, supports standard CCITT V.22bis (2400 bps), Bell 212A (1200 bps), and Bell 103 (300 bps). Extension off-hook detection.
- ◇ Cellular telephone/CDPD capability
- ◇ RS-422 and RS-485 multi-drop
- ◇ Bell 202 lease line 1200 baud modem
- ◇ Packet radio
- ◇ Point-to-point radio

User-Definable Alarms

The user can configure the RtPM™ to activate an alarm when user-defined limits are exceeded, including low battery power. Using Eagle Research's Host software, a user can program the RtPM™ to alarm on almost any condition, such as box intrusion, liquid levels, etc.

Audit Trail and Alarm Log

An audit trail file maintains a record of all parameter changes. A complete history of alarms is also stored in a separate file. Each entry includes the item value as well as the time and date the item entered and exited alarm status. These uneditable files may be retrieved using Eagle Research's software.

Pulse Inputs - Optional

Four programmable Form A or C pulse inputs for low or high speed applications are standard. These inputs can be used for simple pulse counters, or in more demanding applications such as card readers.

Digital Inputs/Outputs - Optional

Five multi-purpose digital I/O lines. High-level functionality including pulse inputs, PWM (pulse width modulation) outputs, and complex custom inputs/outputs. Two I/O lines are connected to field terminals through standard OPTO-22 modules. The other 3 I/O lines can be used as either Form C or A relay outputs or status inputs.

Hazardous Location

The RtPM™ is designed for Class I, Division 1 and Class I, Division 2 hazardous location applications.

Custom RtPM Products

The heart of the RtPM™ is an intelligent, rugged, industrial computer programmable via modular processes to perform custom tasks. Eagle Research can cost-effectively supply a product tailored to your specific application. Talk to your sales representative for details.

Features	Description	
Input Power	7-30 VDC. Two battery inputs with MTA connectors. One power supply/rechargeable battery input with screw terminals. One solar power input with screw terminals (10 Watt Maximum Panel Size).	
Consumption	5 AH battery, 2-hr charging per day @ 50 mA charge rate 1 mA average current. Less than 100 uA sleep current.	
Power Monitoring	Supply voltage monitoring through a/d with low supply voltage interrupt	
Backup Battery	3.6 VDC lithium backup battery: 10 years typical backup of database and time/date during normal use.	
Processor	Phillips P51XAS3 high performance 16-bit microcontroller running at 22.1184 MHz	
Memory	512K x 8 remotely-programmable FLASH program memory 512K x 8 battery-backed RAM data memory	
Real-time Clock	Battery-backed, quartz crystal controlled; +/- 1 sec/day typical accuracy; Programmable time scheduled interrupt capability	
Communications	One modem port with extension off-hook detection. Speed up to 2400 baud. One RS-232 ports with RX, TX, RTS, CTS, and communication switch signals. Configurable speed up to 115,200 baud. Directly interfaces to modems, radios, etc. via 6-position MTA or screw terminals. Communication protocols selectable on a per port basis. Eagle HexASCII, Modbus, Teledyne/Geotech, Valmet	
Status LED	One software-controllable LED for various function indications	
O P T I O N A L C O N F I G U R A T I O N S	Internal Inputs	One ambient temperature input; one supply voltage input
	Pulse Inputs	Four pulse inputs, software programmable for Form A or C; high or low speed. Each counter is a six-digit (0-999999) hardware counter with programmable interrupt support. Can be used for simple pulse accumulation, and for more complex applications such as card readers
	Digital I/O's	Five multi-purpose, memory-mapped digital i/o lines. High-level functionality including pulse inputs, PWM (pulse width modulation) outputs, and complex custom inputs/outputs. Two I/O lines are connected to field terminals through standard OPTO-22 modules. The other 3 I/O lines can be used as either Form C or A relay outputs (solid state 100 mA max ac/dc) or status inputs (50 V max. DC only).
	Analog Inputs	Six general-purpose analog inputs, 12-bit resolution, analog sampling, software Calibration. Nominal input ranges 0-5.12 VDC. A 250 ohm resistor in socket allows 4-20 mA or 0-5 VDC input for each channel. Each input has 3 screw terminals (Supply, Signal, and Ground). Supply voltage jumper selectable to connect the switched input voltage or allow connection of an external source or 5 VDC buffered reference.
	RTD Inputs	Two 12-bit resolution RTD inputs; 3-wire lead compensated with ground shield Connection; four screw terminals per input
	Expansion Capability	Additional connectors provide redundant termination points to allow for Configuration flexibility. Two 10-position connectors allow for expansion over the I ² C communication bus Optional isolated analog output modules and optional serial ports
Transmitters/Sensors Accuracy Specifications		
Pressure Transmitter	SEE SPECIFICATIONS FOR DETAILS	