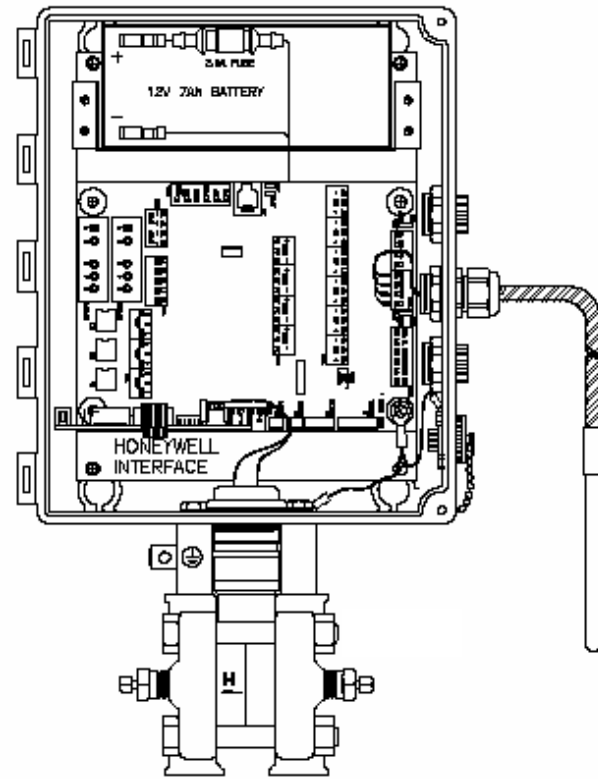
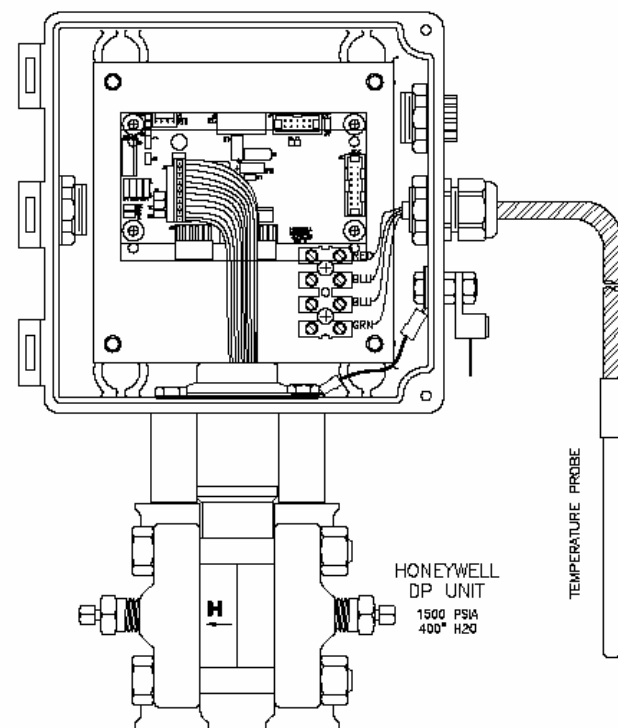


## XARTU/1™ – Interior View with w/ Optional External LCD



## XARTU/1™ Transducer Interface for 2nd Run



**EAGLE RESEARCH CORPORATION**  
Product Information

## PRODUCT DATA

### XARTU/1™ MVT – Orifice Flow Computer

#### Major Features

##### Low Power CMOS Design

- ⇒ Compact, Rugged, Reliable
- ⇒ Full AGA-3, AGA-8 (Detail/Gross I&II), NX-19 Calculations
- ⇒ Flexible Communications Options
- ⇒ Honeywell MVX 2000 Multivariable
- ⇒ Typical Power Configuration – 5 Watt Solar w/ 7.2 AH Internal Battery
- ⇒ Multiple Run Capability
- ⇒ 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
- ⇒ Class 1, Div 2 Approved



**XARTU/1B™ – MVT**

#### Product Description

The XARTU /1™ Remote Terminal Unit (RTU) 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 XARTU/1™ design philosophy. It is a balanced system featuring flexible memory, I/O, power and communications schemes including support for HEXASCII, MODBUS, and various other customer protocols upon request. A harsh environment tolerance is another of the XARTU/1™ strengths. The operating temperature can range from -40°C to 70°C, and the XARTU/1™ 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 XARTU/1™, normally fed with a 6-30 VDC supply, employs a low-power CMOS design. A wide range of options to power the device include AC, and solar power and thermoelectric generators for sites without conventional power availability.

The optional operator interface is a tow-line, 32-character liquid crystal display, and 25-key keypad with 10 user-definable keys. This allows users to remotely examine and/or change process data and diagnose problems without a local host or terminal.

The XARTU/1™ can calculate corrected volume using AGA-3, AGA-8 and NX-19 Reports and is fully compatible with Eagle Research's entire family of products. The orifice application provides for both flow and time weighted averaging and is suitable for custody transfer applications. Eagle Research is committed to providing a complete solution for all gas flow and control applications.

## Reliability

The XARTU/1™ 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, and providing NEMA 4X packaging. Operating Temperatures from -40°C to +70°C (-40°F to +158°F).

## Communications

One modem port and one RS-232C serial port for hand held data collector/PC are standard. Available XARTU/1™ 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.
- Digital or Analog Cellular Options
- RS-422 and RS-485 multi-drop
- Bell 202 lease line 1200 baud modem
- Spread Spectrum and Licensed Frequency Radios
- Point-to-point, Point to Multi-Point radio

## User-Definable Alarms

The user can configure the XARTU/1™ 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 XARTU/1 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.

## Environmental Tolerance

Operating temperature can range from -40°F to +158°F (-40°C to +70°C) with non-condensing humidity of 0 to 95%. The NEMA-4X compression-formed, fiberglass-reinforced nylon enclosure makes the unit ideal for demanding outside installations.

## Hazardous Location

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

| <b>Honeywell MVX 3000 MVT MXA125 Accuracy Specifications</b><br>(Includes combined effects of linearity, hysteresis, and repeatability) |  |
|---|--|
| <b>Differential Transducer Reference Accuracy</b>   | ±0.075% of calibrated span or upper range value (URV), whichever is greater. For URV below reference point (25 inH <sub>2</sub> O), accuracy equals: ±0.0125% +0.0625% (25/span)<br>SEE SPEC SHEET FOR ADDITIONAL DETAILS. |
| Zero Temperature Effect per 28°C (50° F)  | +0.1% of calibrated span   |
| Zero + Span Temperature Effect per 28°C (50° F)   | +0.125% of calibrated span.  |
| <b>Static Pressure Transducer</b>   | +0.075% of calibrated span or upper range value (URV), whichever is greater—Terminal based.<br>Below Reference Point: 0.0125% +0.0625% (20/span)<br>SEE SPEC SHEET FOR ADDITIONAL DETAILS.                                 |
| Zero Temperature Effect per 28°C (50° F)  | +0.10% of calibrated span.   |
| Zero + Span Temperature Effect per 28°C (50° F)   | +0.125% of calibrated span.  |
| <b>RTD Sensor</b>   | ±1°F   |

## 9010080 XA Series™ Flow Computer Specifications

|                             |   |
|-----------------------------|---|
| <b>Input Power</b>          | 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.   |
| <b>Consumption</b>          | 7 AH battery, 2-hr charging per day @ 250 mA charge rate (5w) 2 mA average current. Less than 100 uA sleep current.   |
| <b>Power Monitoring</b>     | Supply voltage monitoring through a/d with low supply voltage interrupt   |
| <b>Backup Battery</b>       | 3.6 VDC lithium backup battery: 10 years typical backup of database and time/date during normal use.  |
| <b>Processor</b>            | High performance 16-bit microcontroller   |
| <b>Memory</b>               | 512K x 8 remotely-programmable FLASH program memory 512K x 8 battery-backed RAM data memory   |
| <b>Real-time Clock</b>      | Battery-backed, quartz crystal controlled; +/- 1 sec/day typical accuracy; Programmable time scheduled interrupt capability   |
| <b>Internal Inputs</b>      | One ambient temperature input; one supply voltage input   |
| <b>Pulse Inputs</b>         | 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   |
| <b>Digital I/O's</b>        | 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).                |
| <b>Analog Inputs</b>        | 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. |
| <b>RTD Inputs</b>           | Two 12-bit resolution RTD inputs; 3-wire lead compensated with ground shield Connection; four screw terminals per input   |
| <b>Communications</b>       | 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 (ASCII / RTU), Enron, Daniel, Modicon                         |
| <b>Status LED</b>           | One software-controllable LED for various function indications  |
| <b>Expansion Capability</b> | Additional connectors provide redundant termination points to allow for Configuration flexibility. Two 10-position connectors allow for expansion over the I <sup>2</sup> C communication bus. Optional isolated analog output modules and optional serial ports  |