XARTU/1™ VOLUME CORRECTOR

The XARTU/1-LDVI™ Volume Corrector is the core product in the volume corrector line. This unit runs on the proven XARTU/1™ SBC61 circuit board, heart of all products in the Eagle XA/1 series. The VC-LDVI includes an internal pressure transducer, an internal RTD (resistance temperature detector), external display and 2400 bps modem in the standard product offering. An optional Low Drag Vertical Index (LDVI™) provides the user with a low cost mechanical backup to the electronic device.

The VC-LDVI contains a full complement of standard Eagle Research processes, including AGA 7 and AGA 8 (Detail and Gross Method I & II) computational functionality. Additional features include complete communications functionality with popular analyzers for energy monitoring requirements. The VC-LDVI is a fully functional flow computer capable of Alarm Call-out, Control and a variety of other process related activities.

Although the VC-LDVI includes a 2400 bps modem as standard, the unit can be interfaced to a wide variety of other communications devices such as Radio, Cellular, and Satellite modems. Clockwise and counterclockwise meter rotations are handled by a simple reversal of the index in the housing.

This configuration offers:

- Low Drag Vertical Index (LDVI).
- Single and Bi-Directional Versions Available.
- AGA 7, AGA 8 (Detail & Gross Method I & II), & NX-19
- Wide choice of Pressure Ranges (Absolute or Gauge)
- 100 ohm Platinum RTD (resistance temperature detector)
- Digital Outputs for Corrected/Uncorrected Volumes
- Configurable for Forward, Reverse and Net Volumes
- Power Requirement Dependent on Communications Method and Frequency
- Multi-Run Configurations Available Using a Transducer Interface or XDI.
- Warranty: Four Years on all Eagle Research manufactured components

Packaging of the XARTU/1-LDVI™ is determined by the application and communications requirements:

- Phone, Cellular, Radio or Satellite Communications options
- Battery Backup Individually Sized to Meet Application & Communication Specifications
- Can be Packaged with a 1 Watt Solar Panel and 1.2 AH Battery
- Replaceable Alkaline, Disposable Lithium, & Disposable Alkaline
- Ultrasonic & Coriolis Applications Available

Expansion Capability: Additional connectors provide redundant termination points to allow for configuration flexibility. Two 10-position connectors allow for expansion over the I2C communication bus. Optional isolated analog output modules, optional serial ports (RS-232/485), and optional Remote I/O (RIO) Boards available for more expansion capabilities.

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Technical Specifications:

- **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)

- **Power Monitoring:** Supply voltage monitoring through A/D with low supply voltage alarming

- **Backup Battery:** 3.6 VDC lithium backup battery for database, history, audit trail, time/date, RAM memory.

- **Memory:** Store up to 32,000 Time Stamped Records with programmable FLASH program memory and battery-backed RAM data memory

- **Communications:** Available On-Board Dial-up Modem port with extension off-hook detection. Two RS-232 ports with RX, TX, RTS, CTS, and communication switch signals. Up to 4 Expansion Comm Ports (RS-232/485). Configurable speed up to 115,200 baud. Directly interfaces to Cell Modems (TCP/IP), Radios, Satellite, etc. Communication protocols selectable on a per port basis: Eagle HexASCII or Modbus

- **Flow Meter support:** AGA7 - Turbine Meter/ Rotary/PD, UM with AGA9, Coriolis with AGA11

- **Supercompressibility:** NX19, AGA8 (Gross Method I, Gross Method II and Detailed Methods)

Inputs / Outputs (I/O) Available:

- **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/Os:** 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 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 (16 bit available), analog sampling, software calibration. Nominal input ranges 0-5VDC or a 250 ohm resistor in socket allows for 4-20 mA input for each channel. Each input has 3 screw terminals (Supply, Signal, and Ground).

- **RTD Inputs:** Two 12-bit resolution RTD inputs; 3-wire lead resistance compensated with ground shield connection; four screw terminals per input.

Accuracy Specifications:

- Accuracy from -20 °F to 140 °F (including linearity, hysteresis and repeatability)

Pressure Measurement	±0.25% of full scale
Temperature Measurement	±1.0°F
Computation (At reference conditions)	±0.3% of corrected volume reading
Combined (Pressure, Temperature & Computation)	±0.42%

- Long Term Stability

Pressure Measurement	±0.5% of full scale per year
Temperature Measurement	±0.5°F per year
Combined (Pressure, Temperature & Computation)	±0.36% per year

Field to Front Office Solutions™