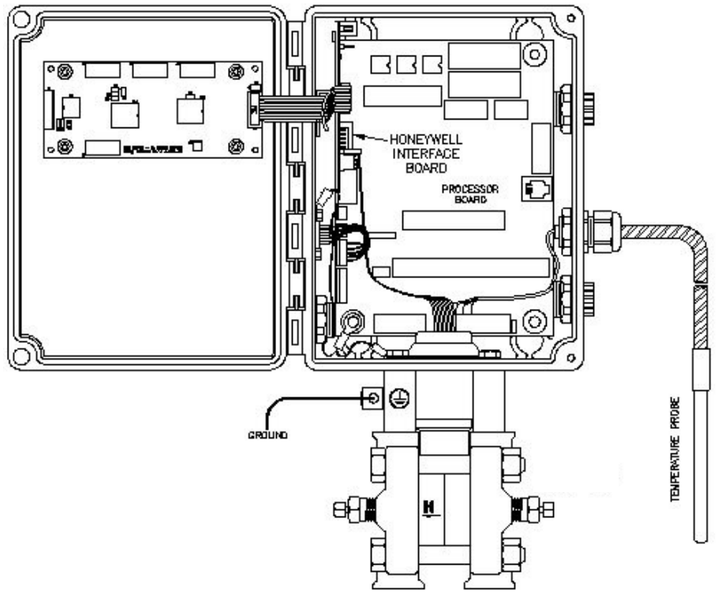
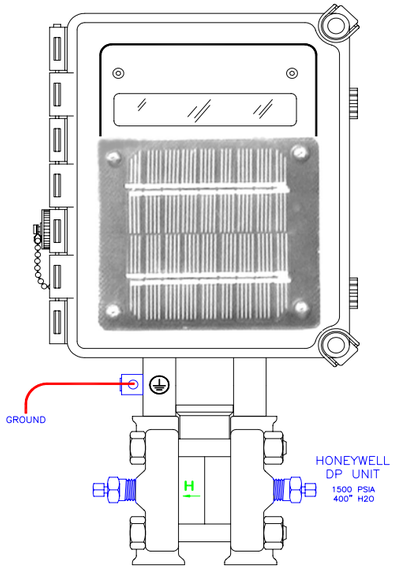
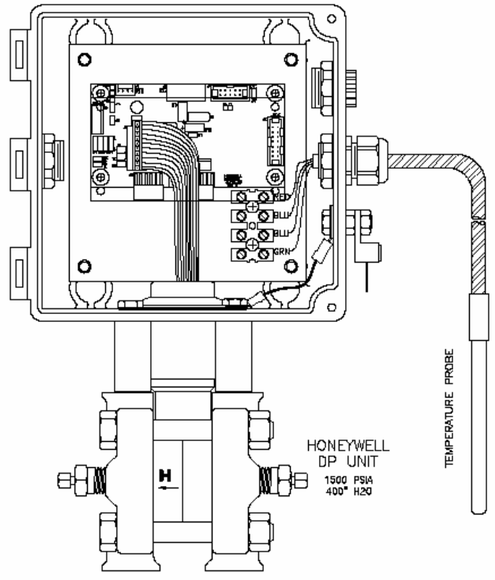
XARTU/1™ – Interior View with w/ Optional External



XARTU/1™ Exterior View with 1 Watt Panel



XARTU/1™ Transducer Interface for 2nd Run



EAGLE RESEARCH CORPORATION

Product Information

PRODUCT DATA

XARTU/1™ MVTCR – Orifice Chart Replacement

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 Multivarible
- ⇒ Typical Power Configuration – 1 Watt Solar w/ 1.2 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 Pending

XARTU/1™ – MVTCR

Product Description

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

Flexibility and reliability are 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 environmental tolerance is another of the XARTU/1™ strengths. The operating temperature can range from -40ºC to 70ºC, 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™ power saving design permits operation of the flow computer utilizing a door mounted One Watt Solar Panel and internal 1.2 AH Battery backup. In certain applications, the device is capable of powering several different types of wireless communications devices including cell phones, digital cellular devices such as CDMA modems and fixed/spread spectrum radios depending on the frequency of data required from the device.

The optional Palm interface emulates the functionality of the optional hardware keypad and display found in other Eagle Research products. 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. Eagle Research is committed to providing a complete solution for all gas flow and control applications.

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Web: http://www.eagleresearchcorp.com

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).

Memory

The XARTU/1™ 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 RS-232C serial port for hand held data collector/PC are standard—optional 2400 baud internal modem. 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

Chart Replacement with 1-Watt Solar Panel

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.

Pulse Inputs

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

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.

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 approved for Class I, Division 2 hazardous location applications, Class I, Division 2 pending.

Custom XARTU/1 Products

The heart of the XARTU/1™ 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.

9010080 XA Series™ Hardware 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.
Consumption	1.2 AH battery - less than 3 mils average current with once per second variable sampling and calculating once per minute not including communications. Less than 1.5 mils sleep current. Provides 16 days of autonomy.
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	High performance 16-bit microcontroller
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
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
Communications	Optional modem port with extension off-hook detection. Speed up to 2400 baud. Standard 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
Status LED	One software-controllable LED for various function indications
Expansion Capability	Additional connectors provide redundant termination points to allow for Configuration flexibility. Two 10-position connectors allow for expansion over the I^2C communication bus. Optional isolated analog output modules and optional serial ports
Honeywell MVX 2000 MVT Accuracy Specifications (Includes combined effects of linearity, hysteresis, and repeatability)	
Differential Transducer	±0.25% of calibrated span or upper range value (URV), whichever is greater. For URV below reference point (50 inH2O), accuracy equals ±0.25% (50/span) SEE SPEC SHEET FOR ADDITIONAL DETAILS.
Absolute Pressure Transducer	+0.25% of calibrated span or upper range value (URV), whichever is greater—Terminal based. For URV below reference point (250 psig), accuracy equals: +0.25% (250/span) SEE SPEC SHEET FOR ADDITIONAL DETAILS.
RTD Sensor	±1°F