



ELECTRONIC VOLUME CORRECTOR (EVC)  
ELECTRONIC PRESSURE RECORDER (EPR)  
3-CHANNEL ELECTRONIC RECORDER (ER)  
INTERVAL DATA RECORDER (IDR)  
ALARM PRESSURE RECORDER (APR)



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The most advanced, versatile and economical  
IDR, APR, EVC, EPR, and ER available.





## CONFIGURABLE APPLICATIONS

### EVC

- Correct volume flow for the effects of live/fixed pressure, temperature, and supercompressibility.
- Configurable for up to three (3) inputs for pressure and temperature.
- System calculates, records, and stores event, alarm, configuration and measurement history in nonvolatile memory.
- EVC can be configured to operate concurrently as an EPR.

### EPR

- Measures and store pressure and temperature values and is configurable for up to three (3) inputs including: pressure transducer, pressure transmitter, differential pressure transducer, differential pressure transmitter, PT 100 temperature RTD, and temperature transmitter.
- Individually configurable scheduled wakeup intervals: continuous, 15 sec., 30 sec., 1, 2, 3, 4, 5, 6, 10, 12, 15, and 30 minutes.
- Individually configurable scheduled extended log interval: 1, 2, 3, 4, 5, 6, 10, 12, 15, 30, and 60 minutes.

### ER

- Configurable for application as a Stand-alone Electronic Readout (SER) or ER for application with most pressure and temperature transducers/transmitters.
- Capable of receiving a pulse input from a turbine, rotary, diaphragm or ultrasonic meter and displaying and storing associated corrected/uncorrected volume data.
- Local display (LCD) is configurable for any 8-character value description, measurement unit, scale and resolution.

## SYSTEM INPUTS

### PRESSURE TRANSDUCER

- Configurable for 1 to 3 pressure transducers. Each transducer Individually compensated for effects of pressure and temperature.
- Pressure ranges: 15, 30, 60, 100, 200, 300, 500, 1000, and 2000 psi Gauge or Absolute (standard). Differential and metric transducers are optional.

### PRESSURE TRANSMITTER

- Compatible with standard, differential, or linear pressure transmitter.

### TEMPERATURE RTD OR TRANSMITTER

- Configurable for 2, 3, or 4 wire PT 100 RTD (Platinum Tip 100 OHM resistance)
- Standard RTD dimensions: 6" ss probe x 60" armored cable. Optional 9" probe or 72" armored cable. Custom dimensions available. RTD is compensated over operating range.
- Compatible with standard temperature transmitter.

## ACCURACY

### PRESSURE TRANSDUCER

- +/- 0.2% of reading (atmospheric to full scale pressure).
- Economical EPR option: +/- 1% of reading.

### TEMPERATURE RTD

- +/- 0.3° F. over full operating temperature range (-40° - 150° F.).

### CALCULATED CORRECTED VOLUME (EVC)

- +/- 0.25% of reading (atmospheric to full scale pressure).

**Galvanic Applied Sciences Inc.**  
manufactures gas quality and flow  
measurement equipment for the natural  
gas and other process industries.

Our products include H<sub>2</sub>S analyzers,  
sulfur chromatographs, BTU and other  
chromatographs, infrared CO<sub>2</sub>, moisture  
and electronic flow and pressure  
correctors, (EVC, EPR).

A comprehensive line of advanced gas  
quality measurement products coupled  
with advanced communications.

## CALIBRATION AND VERIFICATION

- Graphical User Interface (GUI) software provides features for pressure (P) and temperature (T) verification and calibration.
- Verification feature allows user to manually input reference value (P/T) and to capture and record measured value. Reference and actual values are stored in configuration log (database) and include date/time stamp.
- Calibration feature provides optional single point or two-point calibration.
- Calibration/verification routines are easily accomplished in the field.

## VOLUME CORRECTION (EVC) - AGA 7 AND AGA 8

- Corrected volume is calculated using AGA 7 method.
- Supercompressibility is calculated using user-selectable AGA 8 Gross Method 1 or Gross Method 2.

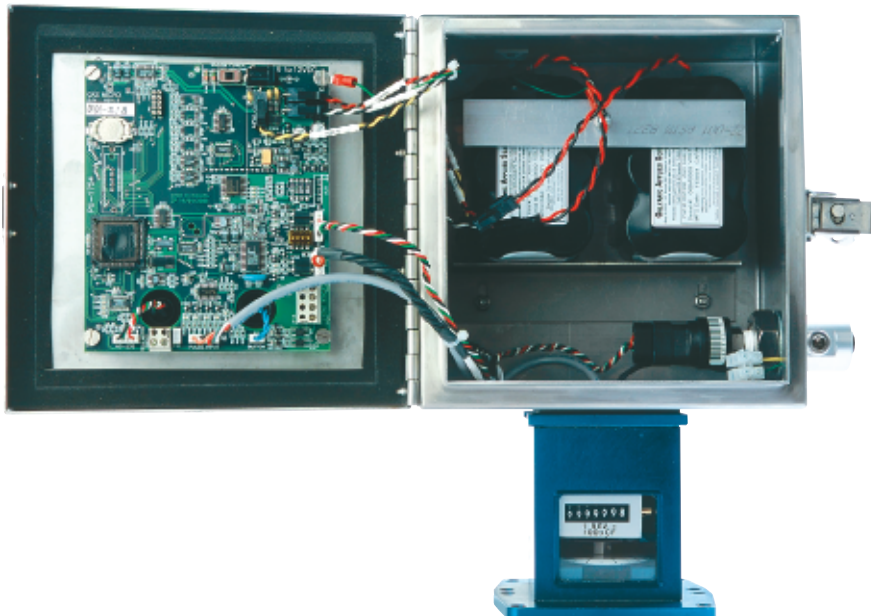
## VOLUME INPUT (EVC)

### MECHANICAL INDEX WITH PULSE GENERATOR

- Index designed for mounting integrally or remotely from the GAS Micro enclosure.
- Pulse generator is integral in mechanical index.
- The index is configurable for clockwise (cw) or counter clockwise (ccw) flow.
- Index incorporates a mechanical test (clocking) wheel and a seven digit mechanical counter.
- Standard index supports meter drive rates for 10', 100', and 1000'. 5' drive and metric meter drive units are optional.

## ROCKING DETECTION

- Multiple reed switch design and pulse input validation eliminates the occurrence of false uncorrected pulses.



## DIRECTION DETECTION

- Multiple reed switch design allows the system to differentiate between forward and reverse flow
- The system is capable of measuring and storing uncorrected and corrected reverse flow.

## SINGLE PULSE

- Compatible with single pulse generators with Form A type output.
- Capable of processing up to 500Hz pulse input frequency.

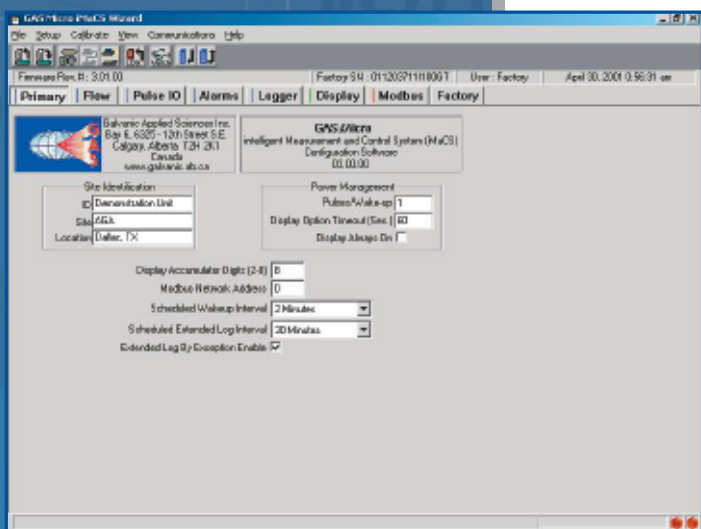
## OUTPUT

### PULSE OUTPUT

- Two optically coupled, open-collector pulse outputs (consistent with form A pulse output)
- Configurable for corrected, uncorrected, and alarm output. Output is scalable using pre-configured units or by user-configurable factor
- Output frequency is user selectable and supports 0.5Hz - 8Hz
- Additional mechanical uncorrected pulse output (Form A type).

### LCD DISPLAY

- 8 character alphanumeric LCD display. Pixel type with automatic update (refresh) supports display of real-time data in plain language (English alphabet) text.
- A Piezo switch mounted externally on the enclosure door activates display and scrolling feature.
- Standard LCD supports the display of 31 user-selectable values.
- LCD has a self-adjusting contrast to compensate for the effects of ambient temperatures.



## PRIMARY

## ALARMS

- Low/High alarming available for three analogue input channels (i.e. pressure and temperature) and corrected flow rate.
- Low alarming available for three battery options (primary, secondary, and modem), high nomination (corrected volume), and reed switch fail.
- Alarms are configurable for report-by-exception (callout).
- Configurable for discrete alarm input from auxiliary devices.

## AUDIT TRAIL AND DATA STORAGE

- GAS Micro maintains 64 days of hourly data, 188 days of daily data, and 3 years of monthly records in non-volatile memory.
- GAS Micro Configuration Event log stores 128 records and the Alarm log stores 512 records.
- Data logs are compatible for simple copy/paste into other Microsoft(tm) applications.

## SOFTWARE

- System software is compatible with Microsoft Windows(tm) 98, 2000, ME, and NT Operating Systems.
- Interface uses standard Windows format and design elements. Majority of instructions/interaction are point-and-click and drag-and-drop.
- Measurement units and scaling are fully configurable for display in software interface.

## COMMUNICATIONS

### MODBUS

- GAS Micro incorporates MODBUS (ENRON RTU) protocol.

## OPTIONS

### iMaCS (INTELLIGENT MEASUREMENT AND CONTROL SYSTEM)

- Option package includes comprehensive configuration capabilities for LCD Display, Data Logs, Extended Logs, and Modbus.

### DISPLAY

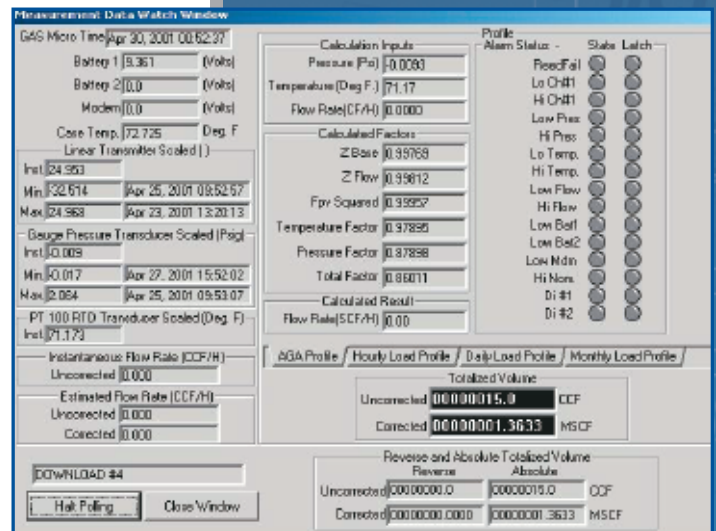
- Fully configurable display for up to 31 user-selectable items. Display items are selectable from the following: 71 configuration values; 51 instantaneous (calculated/measured) values; 28 hourly trend values; 32 daily trend values; 32 monthly trend values; 1344 hourly audit values (168 hours historical x 8 items); 1504 daily audit values, and; 288 monthly audit values.
- Option provides configurable display text, units, scale and decimal place resolution (up to four decimal places).
- Configurable display text supports 8 character alphanumeric values based on English alphabet characters.

### DATA LOGS AND EXTENDED LOGS

- Option provides fully configurable Hourly, Daily, Monthly and Extended Logs.
- Hourly, Daily, and Monthly Logs are configurable for up to 8 user-selectable log items.
- Extended Logs are configurable for up to 4 user-selectable items. Extended Log is assigned to store values every time the system wakes up and measures/calculates values based on scheduled wakeup time versus system wakeup based on a configurable pulse/wakeup event.
- Log items are selected from the following: 29 Configuration items; 31 instantaneous items ("real-time" values); 27 hourly, 31 daily, and 31 monthly measurement values. 8192 values for each log.

### MODBUS

- MODBUS register list is fully mapable and configurable.
- Modbus items are configurable for Read/Write where applicable.
- Modifications to Modbus register items via Modbus host are logged in the GAS Micro Configuration Event Logs.
- Register list is configured using drag-and-drop method from the following user-selectable items: 123 Configuration items; 78 Instantaneous items; 28 Hourly, 32 Daily, and 32 Monthly measurement values, and; 3136 hourly, daily and monthly audit items.



WATCH WINDOW

### **EPR EXTENDED LOGS**

- Extended Logs are configurable for up to 4 user-selectable items.
- Extended Log is used to store values based on scheduled interval wakeup (time). This option is required for all EPR applications and is available as a part of the iMaCS option package or separately.
- Extended Log by exception feature writes to the log only when an item changes by a user-selectable amount.

### **HIGH FREQUENCY INPUT**

- Capable of processing up to 4KHz pulse input frequency when powered by battery.
- Capable of processing up to 8KHz pulse input frequency when AC powered.

### **POWER SUPPLY**

- Power supply options include: Alkaline/Lithium battery packs; battery receptacle(s); Solar, and; AC power with internally mounted Class I, Division II approved converter.
- Theoretical battery life for standard EVC configuration is expected to exceed four years.
- System is capable of using up to three battery power supplies.

### **ENCLOSURE**

- Stainless steel enclosure is configurable for EVC/EPR/ER/IDR/APR applications and supports internal mounting of modems and Internet communications hardware and multiple power supply options and combinations.
- White epoxy coated cast aluminum enclosure is suitable for single pressure EVC or EPR applications only. Will accept internal dial-up modem only. Power supply is limited to single battery pack/receptacle or AC. Small enclosure is ideal for application where space is limited.

### **COMMUNICATIONS**

#### **DIAL-UP/LEASED LINE MODEM**

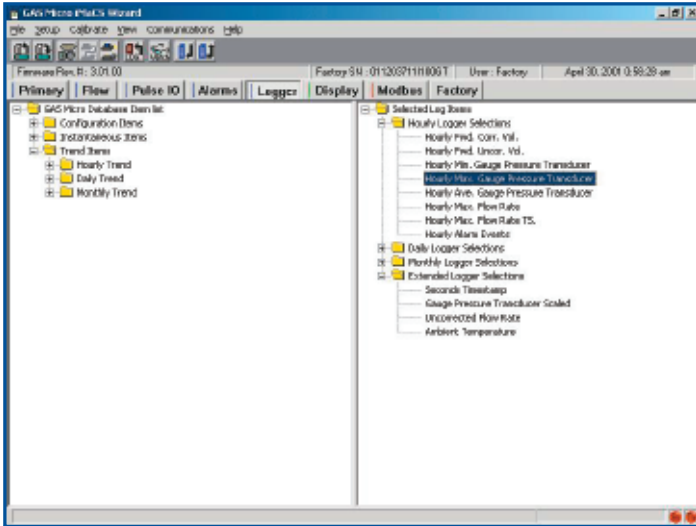
- Optional internal 2400-baud dial-up/leased line modem is designed for low power and extended temperature range operation.
- Modem can be powered from primary (shared) power supply or dedicated modem power supply.

#### **CDPD MODEM**

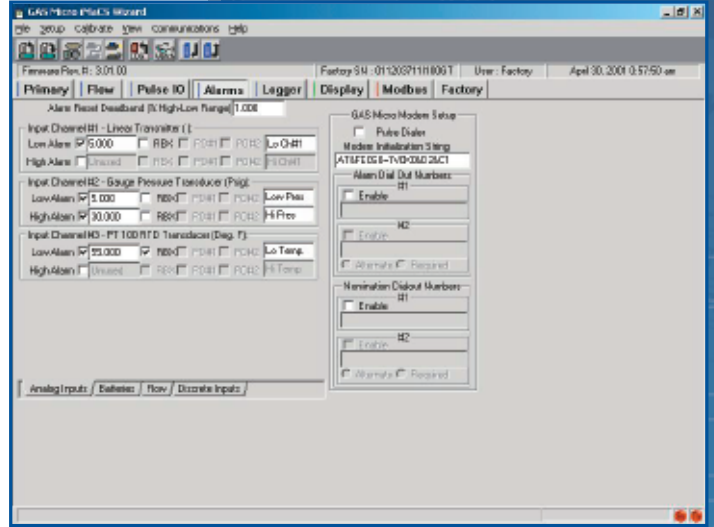
- Internal Airlink Raven II CDPD Modem or external Airlink Raven CDPD Modem. 9 -24 VDC input voltage.
- Designed for low power extended temperature range operation.

#### **INTERNET COMMUNICATIONS**

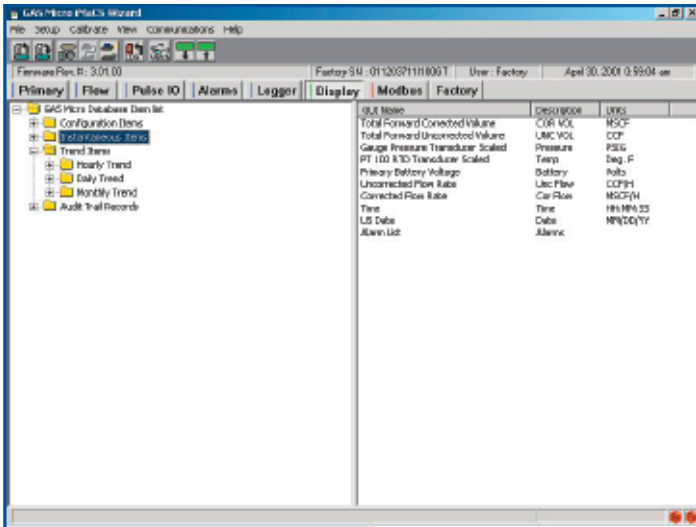
- Optional IP Anywhere™ service with internally mounted Processor Assisted Connector™ (PAC) hardware provides remote enterprise wide access to GAS Micro data from anywhere via a standard web browser interface.
- IP Anywhere™ service supports sophisticated alarm callout and scheduling and seamless data transfer to users internal systems.
- System supports solicited/unsolicited communications.



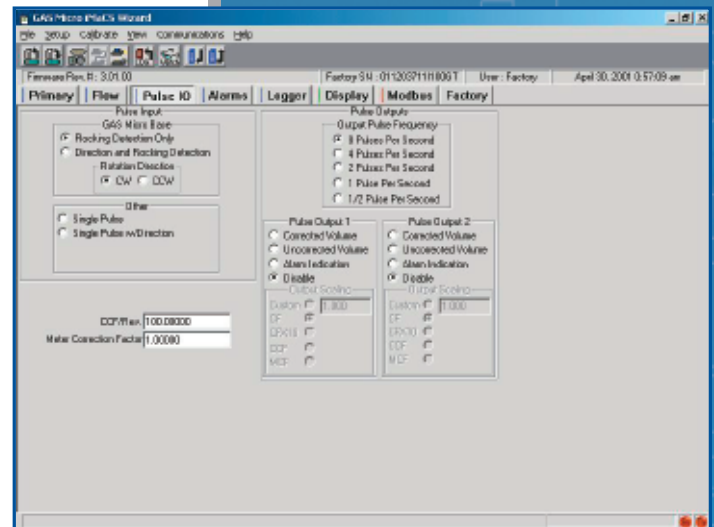
## LOGGER



## ALARM



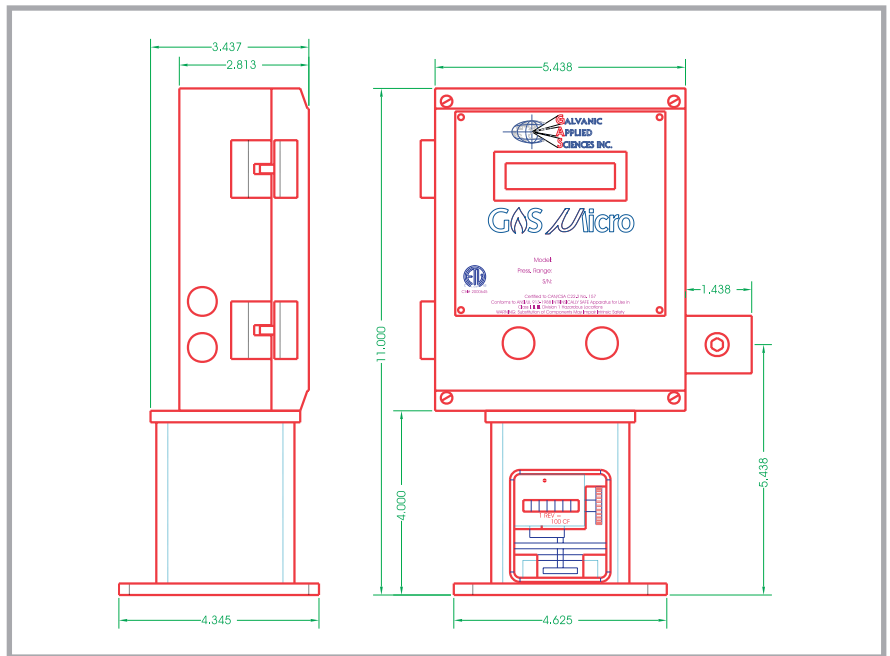
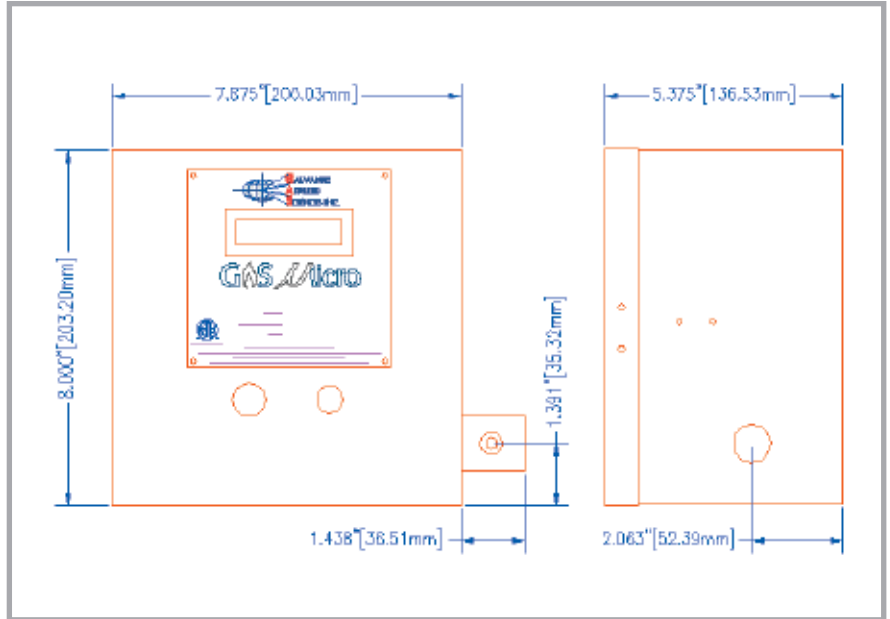
## DISPLAY



## PULSE

## TECHNICAL SPECIFICATIONS

GAS Micro is a universal electronic platform, software interface, and mechanical assembly designed to be configurable for application as an Electronic Volume Corrector (EVC) and/or Electronic Pressure Recorder (EPR), or 3-Channel Electronic Recorder (ER); Internal Data Recorder (IDR); Alarm Pressure (APR).



ISO 9001:2000



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