



CALSCAN

precision
temperature pressure
& flow measurement

HAWK 9500

PRECISION FLOW COMPUTER

The Hawk 9500 is a battery powered flow computer with a difference. It has been designed for simplicity and ease of use and to reduce the total cost of ownership.

Low Cost Installation: The Hawk 9500 is a Class 1 Division 1 Intrinsically Safe flow computer. This allows the Hawk to use simple quick connect cables that requires no explosion proof electrical seals, and therefore installation can be completed within minutes typically without a electrician.

Minimal Consumables: With a battery life of 1.5 to 2 years the Hawk will require infrequent battery changes which is typically done during your yearly verification.



Data Retrieval: Chart and pen replacements are no more, as all can be collected via 40 day flow log on the LCD display or via an SD card when the operator is onsite. Since the Hawk is Intrinsically Safe the flash card can be inserted safely, *without a sniff check*, downloading all the data without an expensive monthly cellular bill.

The data can later be processed in the office into an easy to read monthly report/chart and if needed automatically emailed a PVR or Fieldview data file to your production accounting department. Optionally, the Hawk can also be connected to SCADA via ENRON ModBus.

Hawk 9500 Solutions

Barton Chart Replacement: The Hawk 9500 can run off batteries for over a year making replacement of a Barton Chart quick and easy.

Sneakernet SCADA: Using SD Flash cards, well data can be quickly collected by your operator and automatically sent to production accounting or to your SCADA host on a PC connected to the internet. Later the Hawk can be easily upgraded to realtime SCADA if needed.

Group Well Measurement: The Hawk has been optimized for periodic testing of a single well where a group of wells have been brought together. Up to 20 wells can be individually configured with its own purge time, test time, orifice plate and gas composition. This provides more consistent accurate measurement and greatly reduces the manpower required for testing.

Low Flow Gas Measurement: The Hawk 9500 can be configured with a low flow gas turbine. Using a gas turbine instead of an orifice plate can improve shallow gas and coal bed methane well's performance by reducing back pressure. As well, turbines gives much more accurate low flow measurement than the typical differential based measurement solution.

Specifications

Gas Flow Rate Equations

Orifice: AGA3-92 or ISO5167-2000

V-Cone: McCrometer V-Cone®

Turbine: AGA7

Gas Equations of State

AGA8-92 Detailed

AGA8-92 Gross

Redlich-Kwong with Wichert-Aziz soar gas correction

Liquid Volume Correction

API chapter 11.1-2004

Power Requirements

Power Supply: Two cell Lithium C or A pack or external power

Battery Life: 1.5 to 2 years with differential measurement 2 to 4 years with gas turbine

Environmental

Hazardous Location CSA/UL Approved: Exia

Class 1 Division 1 Group A, B, C, D

Temp Code T5a max Ambient 50°C

Operating Temperature: -40°C to +80°C

Operating Humidity: 5 to 95% non-condensing

Sensor Options

Basic Hawk9500

One precision millivolt Pressure

One external precision RTD

One low power DP sensor

Optional

2nd precision pressure sensor

Up to four turbine inputs

Two more external platinum RTD's

One 4/20mA sensor

Differential Pressure Benefits

Accuracy: $\pm 0.0375\%$ of span

Stability: $\pm 0.01\%$ per year

Rangeability: 400 to 1

Accuracy

Pressure: $\pm 0.05\%$ Full Scale

Temperature: $\pm 0.5^\circ\text{C}$

Communication Options

Field Bus

Intrinsically safe HazNet RS 485

Protocols

CalTalk

Modicon ModBus

ENRON ModBus

Programming and Reporting

CalWin for Windows 98/2000/XP/Vista

Database Capacity

10 Second log: 70 days of history

1 Minute log: 400 days of history

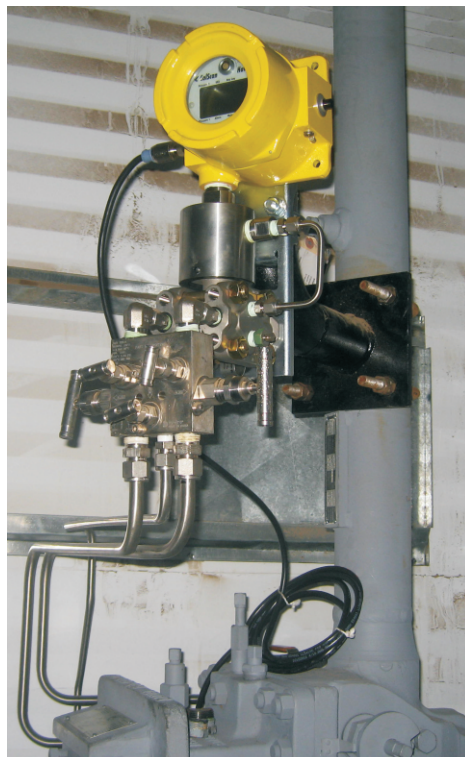
5 Minute log: 1600 days of history

API Chapter 21 Compliant Audit Trail

42 days worth of hourly history

2.8 years worth of daily history

1024 Recorded Events



For warranty, calibration, replacement battery, and local distributor information contact:



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