



Proven Performance
for Over 50 Years

(480) 922-7446

www.cox-instruments.com

COX 4080 -
Flow Computer
Explosion Proof
Housing



COX 4080 FlowComp

Extended Range Fluid Compensation Flowmeter Interface

Description

The **COX 4080** flow computer provides total flow compensation to enhance flowmeter accuracy, while extending the linear flow range. The **COX 4080** tracks all variables to compensate for viscous and inertial effects, due to fluid temperature and pressure variations. Our enhanced DSP technology allows exceptional signal characterization and fast response to output dynamic data in engineering units. Meeting the demanding requirements of the aerospace, automotive and test and measurement industries, the **COX 4080** provides significant improvements in flowmeter accuracy under extreme temperature conditions.

Key Features

- Exceptional response time
- Blade averaging - to enhance low flow resolution
- Integral temperature and pressure amplifier
- Multiple outputs (freq, analog, RS485)
- Roshko and Strouhal correlation, using 16-bit resolution
- Configurable interface software allows fluid selection, configuration of outputs and data logging
- Conformance to SAE ARP 4990 calculations

Benefits

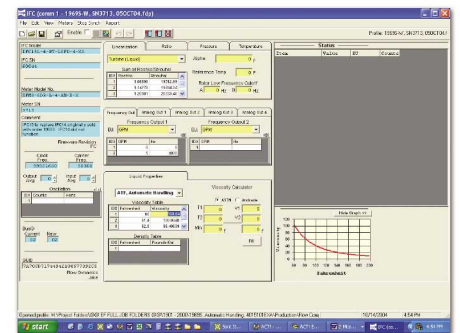
- Improved flow measurement accuracy and range
- Dynamic response, with fully compensated output
- Easy interface to DAQ System
- One device for multiple signals outputs
- No external amplifiers or signal conditioners necessary

Software Interface

COX 4080 software graphical user interface is intuitively easy and allows powerful characterization of the process signals, output signals and liquid properties.

Provides:

- Identification and comments
- Configuration and service history store directly in processor
- Input linearization
- Output characterization
- Instantaneous data
- Stores and recalls configuration software compatible with Windows operating system
- Liquid properties
- Data Logging



Applications

- Engine test cells and test stands
- Precision monitoring
- On-board automotive and aerospace testing
- Control loop
- Custody transfer

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Unit Specifications

Input Power

- 24 VDC nominal, 1.2W max.
 - 9-32 VDC (digital output only)
 - 15-32 VDC (for analog outputs 5V, 10V & 4-20 mA)

Flowmeter Input Type (3 Channels: A, B & Quad)

- Pulse TTL Compatible
 - Frequency range: 1 Hz to 3 kHz
- RF 10 Ohm Carrier
 - Frequency range: 5 Hz to 3 kHz
 - Oscillator frequency: 55-65 kHz

Temperature Input Type

- Thermistor 10k Ohm
- RTD 100 Ohm Platinum
- Current 4-20 mA
- Voltage 0-10 VDC or 0-5 VDC

Linearization

- Flowmeter K-factor
 - Number of Points: 2-200
 - Interpolation Method: Linear
 - Correlation: Strouhal - Roshko (per ARP4990 publication)
- Temperature
 - Number of Points: 2-50
 - Interpolation Method: Linear
- Viscosity
 - Number of Points: 2-100
 - Interpolation Method: Linear
 - Correlation: ASTM D341-93, Andrades Equation or user-defined
- Density
 - Number of Points: 2-50
 - Interpolation Method: Linear

Outputs

- Variables available for output
 - Linearized Volume Flow Rate
 - Linearized Mass Flow Rate
 - Flow Total
 - Temperature
 - Pressure
- Frequency (2 frequency output channels)
 - 0 to 5 VTTL, 0.6 to 16,000 HZ
- Transmission Distance: 250 ft. maximum when installed per the manual
- Analog (2 analog output channels) each independently linearized and scaled
 - Ch 1, 4 to 20 MA, Ch 2, 0 to 5 VDC or 0 to 10 VDC
- RS485 (Volume/Mass Flow, Temperature, Other)

Performance

- Accuracy
 - Linearized Frequency: 0.1% of reading
 - Linearized Analog Output: 0.1% of full scale
 - Thermistor: ± 0.5 °C (does not include sensor uncertainty)
 - RTD ± 0.5 °C (does not include sensor uncertainty)
 - Analog Input (Temperature): 10 Bit A/D, uncertainty 0.1% FS
- Linearization Latency 0.8-2.0 mS + period averaging

Environment

- Temperature
 - Operating: -40 to 185° F (-40 to 85° C)
 - Storage: -67 to 257° F (-55 to 125° C)
- Humidity 0 to 85% RH non-condensing
- Enclosure NEMA 4 or Explosion-proof for Class I, Division 1, Groups B, C and D

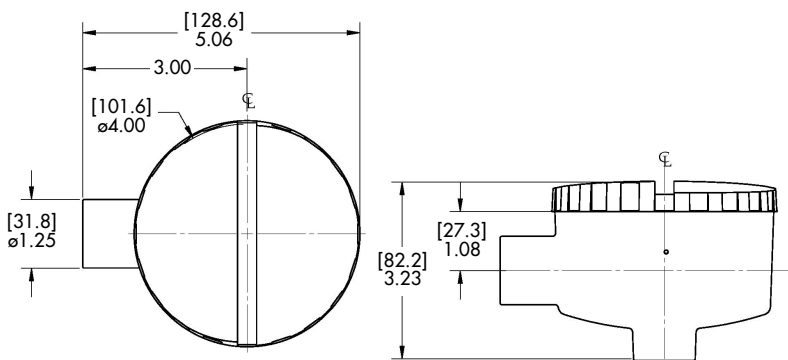
Communication

- Interface RS485, serial USART connection to personal computer (with serial cable)

Model Number

4080-XP

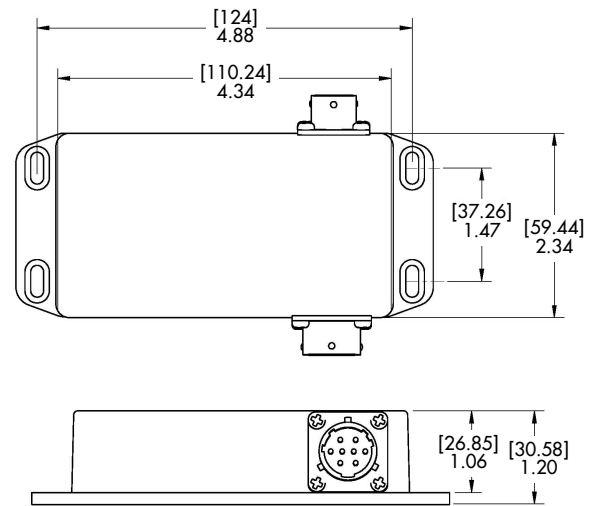
Enclosure: Direct Mount Explosion Proof



Note: Dimensions in [Bracket] are in Millimeters

4080-RM

Enclosure: Remote NEMA 4



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For more information, contact COX Instruments or your local COX Instruments representative.

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