We Claim:

1. A method for operating a system configured to consume a fluid, having at least two flowmeters, comprising the steps of:

recirculating a fluid in a closed loop having a supply-side flowmeter and return-side flowmeter, such that substantially no fluid is consumed;

measuring a fluid flow in the supply-side flowmeter and the return-side flowmeter;

comparing fluid flow measurements between the supply-side flowmeter and return-side flowmeter;

determining a first differential zero value based on a difference in the fluid flow measurements between the supply-side flowmeter and return-side flowmeter;

receiving a first temperature sensor signal value;

associating the first differential zero value with the first temperature sensor signal value;

storing the first differential zero value associated with the first temperature sensor signal value in a meter electronics;

operating an engine disposed between the supply-side flowmeter and the return-side flowmeter, such that fluid is consumed;

calculating engine fluid consumption by comparing fluid flow measurements between the supply-side flowmeter and return-side flowmeter using an engine fluid consumption equation;

applying a differential zero value associated with a temperature sensor signal value in the meter electronics to the engine fluid consumption equation; and

outputting an adjusted fluid consumption measurement that is corrected for the operating temperature.

2. The method for operating the system configured to consume a fluid of Claim 1, wherein multiple differential zero values are determined for the first temperature sensor signal value, each at different time points, and are stored and associated with the first temperature sensor signal value.

3. The method for operating the system configured to consume a fluid of Claim 2, comprising the steps of:

averaging the multiple differential zero values to calculate an averaged multiple differential zero value;

associating the averaged multiple differential zero value with the first temperature sensor signal value;

storing the averaged multiple differential zero value associated with the first temperature sensor signal value in the meter electronics.

4. The method for operating the system configured to consume a fluid of Claim 1, comprising the steps of:

receiving a temperature sensor signal value from at least one of the supply-side flowmeter and the return-side flowmeter while the engine is operating;

measuring a fluid flow in the supply-side flowmeter and the return-side flowmeter while the engine is operating.

5. The method for operating the system configured to consume a fluid of Claim 1, comprising the steps of:

measuring a second fluid flow in the supply-side flowmeter and the return-side flowmeter;

comparing the second fluid flow measurements between the supply-side flowmeter and return-side flowmeter, and determining a second differential zero value based on the difference in the fluid flow measurements between the supply-side flowmeter and return-side flowmeter;

receiving a second temperature sensor signal value from at least one of the supply-side flowmeter and the return-side flowmeter;

associating the second differential zero value with the second temperature sensor signal; and

storing the second differential zero value associated with the second temperature sensor signal value in the meter electronics.

6. The method for operating the system configured to consume a fluid of Claim 5, comprising the steps of:

operating an engine disposed between the supply-side flowmeter and the return-side flowmeter, such that fluid is consumed;

receiving a temperature sensor signal value from at least one of the supply-side flowmeter and the return-side flowmeter while the engine is operating;

measuring a fluid flow in the supply-side flowmeter and the return-side flowmeter while the engine is operating;

calculating engine fluid consumption by comparing fluid flow measurements between the supply-side flowmeter and return-side flowmeter with an engine fluid consumption equation;

applying a differential zero value associated with the first temperature sensor signal value in the meter electronics to the engine fluid consumption equation if the temperature sensor signal value received from at least one of the supply-side flowmeter and the return-side flowmeter while the engine is operating is within a threshold related to the first temperature sensor signal value in the meter electronics;

applying a differential zero value associated with the second temperature sensor signal value in the meter electronics to the engine fluid consumption equation if the temperature sensor signal value received from at least one of the supply-side flowmeter and the return-side flowmeter while the engine is operating is within a threshold related to the second temperature sensor signal value in the meter electronics; and

outputting an adjusted fluid consumption measurement that is corrected for the operating temperature.

7. A method for operating a multi-fuel system, having an engine, at least two fuel tanks configured to each contain different fuels, and at least a supply-side flowmeter and a return-side flowmeter, comprising the steps of:

recirculating a first fuel type in a closed loop while the engine is not operating, such that substantially no fuel is consumed;

measuring a first fuel flow in the supply-side flowmeter and the return-side flowmeter;

comparing the first fuel flow measurements between the supply-side flowmeter and return-side flowmeter, and determining a first differential zero value based on the difference in the fuel flow measurements between the supply-side flowmeter and return-side flowmeter;

receiving a first temperature sensor signal value;

associating the first differential zero value with the first temperature sensor signal value and the first fuel type;

storing the first differential zero value associated with the first temperature sensor signal value and the first fuel type in a meter electronics;

recirculating a second fuel type in a closed loop while the engine is not operating, such that substantially no fuel is consumed;

measuring a second fuel flow in the supply-side flowmeter and the return-side flowmeter;

comparing the second fuel flow measurements between the supply-side flowmeter and return-side flowmeter, and determining a second differential zero value based on the difference in the fuel flow measurements between the supply-side flowmeter and return-side flowmeter;

receiving a second temperature sensor signal value;

associating the second differential zero value with the second temperature sensor signal value and second fuel type;

storing the second differential zero value associated with the second temperature sensor signal value and the second fuel type in the meter electronics;

operating the engine using the first fuel type;

measuring a first operating temperature of at least one of the supply-side flowmeter and the return-side flowmeter; and

retrieving a first differential zero value that corresponds to the first operating temperature and the first fuel type.

applying the first differential zero value to an engine fluid consumption equation; and

outputting an adjusted fluid consumption measurement calculated with the engine fluid consumption equation that is corrected for the first operating temperature and first fuel type.

8. The method for operating a multi-fuel system of Claim 7, comprising the steps of:

switching the fuel type for engine operation;

measuring a second operating temperature of at least one of the supply-side flowmeter and the return-side flowmeter; and

retrieving a second differential zero value that corresponds to the second operating temperature and the second fuel type.

applying the second differential zero value to the engine fluid consumption equation; and

outputting an adjusted fluid consumption measurement calculated with the engine fluid consumption equation that is corrected for the second operating temperature and second fuel type.

9. A meter electronics (20) for flowmeters (214, 216), including a processing system (303), connected to a system (200) having an engine (208) configured to:

receive sensor signals (310) from both a supply-side flowmeter (214) and return-side flowmeter (216) while the engine (208) is not operating;

determine a differential zero offset between the supply-side flowmeter (214) and the return-side flowmeter (216) based on the received sensor signals (310);

determine the temperature of at least one of the supply-side flowmeter (214) or the return-side flowmeter (216);

associate the differential zero offset with the temperature;

store the differential zero offset associated with the temperature in meter electronics (20);

determine a first operating temperature of at least one of the supply-side flowmeter (214) or the return-side flowmeter (216);

compare the first operating temperature to one or more previous temperatures stored in the meter electronics (20); and

if the previously determined zero offset is associated with the first operating temperature, then apply the differential zero offset associated with the first operating temperature to a calculation for determining engine fuel consumption.

10. The meter electronics (20) for flowmeters (214, 216) of claim 9, wherein the processing system (303) is configured to:

determine a second operating temperature of at least one of the supply-side flowmeter (214) or the return-side flowmeter (216);

compare the second operating temperature to one or more previous temperatures stored in the meter electronics (20); and

if the previously determined zero offset is associated with the second operating temperature, then apply the differential zero offset associated with the second operating temperature to a calculation for determining engine fuel consumption.

11. The meter electronics (20) for flowmeters (214, 216) of claim 9, wherein the processing system (303) is configured to:

store multiple differential zero offsets associated with multiple respective temperatures of at least one of the supply-side flowmeter (214) or the return-side flowmeter (216);

calculate an interpolated differential zero offset if a measured operating temperature is between at least two of the multiple respective temperatures; and

apply the interpolated differential zero offset associated with the measured operating temperature to a calculation for determining engine fuel consumption.

12. The meter electronics (20) for flowmeters (214, 216) of claim 9, wherein the processing system (303) is configured to:

store multiple differential zero offsets associated with multiple respective temperatures of at least one of the supply-side flowmeter (214) or the return-side flowmeter (216);

calculate an extrapolated differential zero offset if a measured operating temperature is beyond the range of the multiple respective temperatures; and

apply the extrapolated differential zero offset associated with the measured operating temperature to a calculation for determining engine fuel consumption.

13. The meter electronics (20) for flowmeters (214, 216) of claim 10, wherein the processing system (303) is configured to:

switch between multiple stored differential zero offset values associated with respective stored temperatures to correspond with an operating temperature.