We Claim:

1. A method of determining vapor pressure of a fluid, comprising the steps of:

providing a meter having meter electronics, wherein the meter comprises at least one of a flowmeter and a densitometer;

flowing a process fluid through the meter;

measuring a pressure of the process fluid;

adjusting the pressure of the process fluid with a valve until a monophasic/biphasic boundary is reached; and

determining the flowing vapor pressure of the process fluid at the monophasic/biphasic boundary.

2. The method of determining vapor pressure of a fluid of Claim 1, wherein the step of adjusting the pressure of the process fluid until the monophasic/biphasic boundary is reached comprises lowering a pressure of a valve positioned upstream of the meter.

3. The method of determining vapor pressure of a fluid of Claim 1, wherein the step of adjusting the pressure of the process fluid until the monophasic/biphasic boundary is reached comprises raising a pressure of a valve positioned downstream of the meter.

4. The method of determining vapor pressure of a fluid of Claim 1, comprising the steps of:

measuring the temperature of the process fluid; and

calculating the Reid Vapor Pressure from the temperature and the flowing vapor pressure.

5. The method of determining vapor pressure of a fluid of Claim 4, wherein calculating the Reid Vapor Pressure comprises a look-up table.

6. The method of determining vapor pressure of a fluid of Claim 4, wherein calculating the Reid Vapor Pressure comprises values calculated from a curve.

7. The method of determining vapor pressure of a fluid of Claim 1, comprising determining the presence of entrained gas in the process fluid with a measured drive gain.

8. The method of determining vapor pressure of a fluid of Claim 1, comprising determining the presence of entrained gas in the process fluid by measuring a density of the fluid.

9. The method of determining vapor pressure of a fluid of Claim 1, comprising determining the presence of entrained gas in the process fluid with a combination of a measured drive gain and a measured density.

10. A system (300) for determining flowing vapor pressure of a process fluid comprising:

a meter (5) comprising at least one of a flowmeter and a densitometer;

a pressure regulator (308) in fluid communication with the meter (5);

a pressure sensor (312);

meter electronics (20) in communication with the meter (5) and the pressure sensor (312), wherein the meter electronics (20) is configured to:

receive a measured pressure;

control the pressure regulator (308) to adjust the pressure of the process fluid until a monophasic/biphasic boundary is reached; and

determine the flowing vapor pressure of the process fluid at the monophasic/biphasic boundary.

11. The system (300) of Claim 10, wherein the meter (5) comprises:

one or more conduits (103, 103');

at least one driver (104) attached to the one or more conduits (103, 103') configured to generate a vibratory signal to the one or more conduits (103, 103');

and

at least one pickoff (105, 105') attached to the one or more conduits (103, 103') configured to receive a vibratory signal from the one or more conduits (103, 103').

12. The system (300) of Claim 10, further comprising:

a temperature sensor (106) configured to measure the temperature of the process fluid; and

wherein the meter electronics (20) is configured to calculate the Reid Vapor Pressure from the measured temperature of the process fluid and the flowing vapor pressure.

13. The system (300) of Claim 12, wherein the meter electronics (20) comprises Reid Vapor Pressure reference values stored therein.

14. The system (300) of Claim 13, wherein the Reid Vapor Pressure reference values stored in the meter electronics comprise a look-up table.

15. The system (300) of Claim 13, wherein the Reid Vapor Pressure reference values stored in the meter electronics are calculated therein.

16. The system (300) of Claim 10, wherein the meter electronics (20) is configured to determine the presence of entrained gas in the process fluid with a measured drive gain.

17. The system (300) of Claim 10, wherein the meter electronics (20) is configured to determine the presence of entrained gas in the process fluid with a measured density.

18. The system (300) of Claim 10, wherein the meter electronics (20) is configured to determine the presence of entrained gas in the process fluid with a combination of a measured drive gain and a measured density.