CLAIMS

We claim:

1. A transducer assembly (300) for a vibrating meter having meter electronics (20), comprising:

a keeper portion (401) comprising a keeper plate (402);

a magnet portion (301) comprising:

a coil bobbin (305);

a coil (309) wound around the coil bobbin (305);

a magnet (313) coupled to the coil bobbin (305), wherein the magnet (313) is coupled to the coil bobbin (305) with a pole piece (311); and

a flux ring (307) disposed between the coil bobbin (305) and the keeper plate (402), wherein the flux (307) ring prevents the keeper plate (402) from contacting the coil bobbin (305).

2. The transducer assembly (300) of claim 1, wherein the flux ring (307) circumscribes at least a portion of the coil bobbin (305).

3. The transducer assembly (300) of claim 1, wherein the flux ring (307) circumscribes at least a portion of the coil (309).

4. The transducer assembly (300) of claim 1, wherein the magnet (313) is a permanent magnet.

5. The transducer assembly (300) of claim 1, wherein the coil bobbin (305), the coil (309), and the magnet (313) are fixed in place with relation to each other.

6. The transducer assembly (300) of claim 1, wherein the meter electronics (20) provides an oscillating current to the coil (309) that induces motion of the keeper plate (402).

7. The transducer assembly (300) of claim 1, wherein the keeper portion (401) and the magnet portion (301) are coupled to first and second portions of the vibrating meter,

respectively, wherein at least one of the first and second portions of the vibrating meter comprise a flow conduit (103A, 103B).

8. A method for forming a vibrating meter including a sensor assembly with one or more flow conduits, comprising steps of:

forming a keeper portion comprising a keeper plate;

coupling the keeper portion to a first component of the vibrating meter;

forming a magnet portion comprising a coil bobbin;

coupling the magnet portion to a second component of the vibrating meter;

winding a coil around the coil bobbin;

coupling a magnet to the coil bobbin;

coupling the magnet to the coil with a pole piece;

placing the keeper plate proximate the magnet;

electrically coupling the coil to a meter electronics;

disposing a flux ring between the coil bobbin and the keeper plate; and

preventing the keeper plate from contacting the coil bobbin with the flux ring.

9. The method of claim 8, wherein the first component and second component comprise at least one flow conduit.

10. The method of claim 8, further comprising the step of circumscribing at least a portion of the coil bobbin with the flux ring.

11. The method of claim 8, further comprising the step of fixing the coil bobbin, coil, and magnet in place with relation to each other.

12. The method of claim 8, further comprising the step of providing an oscillating current to the coil that induces motion of the keeper plate.

13. The method of claim 8, further comprising the step of receiving an oscillating current from the coil, wherein the oscillating current is induced by the motion of the keeper plate.