

What is claimed is:

1. A Coriolis flowmeter (205), comprising:
a flowmeter assembly (206) including one or more flowtubes (210);
a driver (220) coupled to and configured to vibrate the flowmeter assembly
5 (206);
two or more pickoff sensors (230, 231) coupled to and configured to generate
two or more vibration signals from the flowmeter assembly (206); and
meter electronics (20) coupled to the driver (220) and the two or more pickoff
sensors (230, 231), with the meter electronics (20) configured to provide a
10 drive signal to the driver (220) and receive the resulting two or more
vibration signals from the two or more pickoff sensors (230, 231);
wherein in the two or more pickoff sensors (230, 231) are affixed at two or more
corresponding pickoff sensor locations that maximize a Coriolis vibration
mode of the Coriolis flowmeter (205).
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2. The Coriolis flowmeter (205) of claim 1, wherein the two or more pickoff sensor
locations increase a meter zero stability at a no-flow condition.
3. The Coriolis flowmeter (205) of claim 1, wherein the two or more pickoff sensor
20 locations are minimally affected by a mounting condition of the Coriolis flowmeter
(205).
4. The Coriolis flowmeter (205) of claim 1, with determining the two or more
pickoff sensor locations comprising determining the two or more pickoff sensor
25 locations that generate a substantially maximum Coriolis vibration mode response
according to a modal analysis.
5. The Coriolis flowmeter (205) of claim 1, with the modal analysis comprising:
determining node locations for each vibration mode; and
30 determining a vibrational contribution to the Coriolis vibration mode by each
vibration mode.

6. The Coriolis flowmeter (205) of claim 1, wherein the Coriolis flowmeter (205) comprises a low-flow Coriolis flowmeter (205).

7. A method of forming a Coriolis flowmeter (205), the method comprising:
5 performing modal analysis on a flowmeter assembly (206) of the Coriolis flowmeter (205);

determining two or more pickoff sensor locations that maximize a Coriolis vibration mode of the Coriolis flowmeter (205) in the two or more vibration signals; and

10 affixing two or more corresponding pickoff sensors (230, 231) at the two or more pickoff sensor locations.

8. The method of claim 7, wherein the two or more pickoff sensor locations increase a meter zero stability at a no-flow condition.

15 9. The method of claim 7, wherein the two or more pickoff sensor locations are minimally affected by a mounting condition of the Coriolis flowmeter (205).

10. The method of claim 7, with determining the two or more pickoff sensor locations comprising determining the two or more pickoff sensor locations that generate a substantially maximum Coriolis vibration mode response according to the modal analysis.

11. The method of claim 7, with the modal analysis comprising:
25 determining node locations for each vibration mode; and
determining a vibrational contribution to the Coriolis vibration mode by each vibration mode.

12. The method of claim 7, wherein the Coriolis flowmeter (205) comprises a low-flow Coriolis flowmeter (205).
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What is claimed is:

1. A Coriolis flowmeter (205), comprising:

a flowmeter assembly (206) including one or more flowtubes (210);

a driver (220) coupled to and configured to vibrate the flowmeter assembly

5 (206);

two or more pickoff sensors (230, 231) coupled to and configured to generate

two or more vibration signals from the flowmeter assembly (206); and

meter electronics (20) coupled to the driver (220) and the two or more pickoff

sensors (230, 231), with the meter electronics (20) configured to provide a

10 drive signal to the driver (220) and receive the resulting two or more

vibration signals from the two or more pickoff sensors (230, 231);

wherein in the two or more pickoff sensors (230, 231) are affixed at two or more

corresponding pickoff sensor locations that maximize a Coriolis vibration

mode of the Coriolis flowmeter (205) in the two or more vibration

15 signals.

2. The Coriolis flowmeter (205) of claim 1, wherein the two or more pickoff sensor locations increase a meter zero stability at a no-flow condition.

20 3. The Coriolis flowmeter (205) of claim 1, wherein the two or more pickoff sensor locations are minimally affected by a mounting characteristic of the Coriolis flowmeter (205).

4. The Coriolis flowmeter (205) of claim 1, with determining the two or more
25 pickoff sensor locations comprising determining the two or more pickoff sensor locations that generate a substantially maximum Coriolis vibration mode response in the two or more vibration signals according to a modal analysis.

5. The Coriolis flowmeter (205) of claim 1, with the modal analysis comprising:
30 determining node locations for each vibration mode; and
determining a vibrational contribution to the Coriolis vibration mode in the two or more vibration signals by each vibration mode.

6. The Coriolis flowmeter (205) of claim 1, wherein the Coriolis flowmeter (205) comprises a low-flow Coriolis flowmeter (205).

5 7. A method of forming a Coriolis flowmeter (205), the method comprising:
performing modal analysis on a flowmeter assembly (206) of the Coriolis
flowmeter (205);
determining two or more pickoff sensor locations that maximize a Coriolis
vibration mode of the Coriolis flowmeter (205) in the two or more
10 vibration signals of two or more pickoff sensors; and
affixing the two or more corresponding pickoff sensors (230, 231) at the two or
more pickoff sensor locations.

8. The method of claim 7, wherein the two or more pickoff sensor locations
15 increase a meter zero stability at a no-flow condition.

9. The method of claim 7, wherein the two or more pickoff sensor locations are
minimally affected by a mounting characteristic of the Coriolis flowmeter (205).

20 10. The method of claim 7, with determining the two or more pickoff sensor
locations comprising determining the two or more pickoff sensor locations that generate
a substantially maximum Coriolis vibration mode response according to the modal
analysis.

25 11. The method of claim 7, with the modal analysis comprising:
determining node locations for each vibration mode; and
determining a vibrational contribution to the Coriolis vibration mode by each
vibration mode.

30 12. The method of claim 7, wherein the Coriolis flowmeter (205) comprises a low-
flow Coriolis flowmeter (205).