We claim:

1. A fin sensor (102) for detecting flow characteristics, with a base (106), the base coupled to a first fin (108a) and a second fin (108b), the fin sensor (102) further having at least two transducers (104a and 104b) coupled to the fins (108a and 108b), the first fin (108a) being coupled to the second fin (108b) by at least one fin coupler (120a and/or 120b); and

wherein the first fin coupler (120a) has a coupling element, and the first fin (108a) has another coupling element (120b), wherein the coupling element is complementary to the another coupling element such that the coupling element is configured to couple to the another coupling element.

2. A fin sensor (102) as claimed in claim 1, wherein the at least one fin coupler (120a and/or 120b) is a rod shaped fin coupler (220a).

3. A fin sensor (102) as claimed in claim 1, wherein the at least one fin coupler (120a and/or 120b) is a brace bar (220c).

4. A fin sensor (102) as claimed in claim 1, wherein the at least one fin coupler (120a and/or 120b) is a strip shaped fin coupler (220b).

5. A fin sensor (102) as claimed in claim 4, wherein the strip shaped fin coupler (220b) has at least one tapered end.

6. A fin sensor (102) as claimed in claims 4 and 5, wherein the strip shaped fin coupler (220b) is tapered such that the one or more of an upstream (143) end and a downstream (145) end of the strip shaped fin coupler (220b) have a smaller cross sectional area in a plane defined by a vertical axis (151) and a cross axis (131) than a cross sectional area in a plane defined by the vertical axis (151) and the cross axis (131) of a more central position along a flow axis (141) of the strip shaped fin coupler (220b).

7. A fin sensor (102) as claimed in claims 4 and 5, a cross section in a plane defined by the vertical and flow axes of the strip shaped fin coupler (220b) being narrower in a

vertical axis (151) at one or more of an upstream (143) end and a downstream (145) end of the cross section than at least one central portion in a flow axis (141) between the upstream (143) end and the downstream (145) end of the cross section.

8. A fin sensor (102) as claimed in claims 1 to 7, wherein the at least one fin coupler (120a and/or 120b) couples the fins (108a and 108b) at locations that are substantially the same on corresponding faces of the fins (108a and 108b).

9. A fin sensor (102) as claimed in claims 1 to 8, wherein the fins are arranged to have the same placement such that the at least one fin coupler (120a and/or 120b) is parallel to a cross axis (131) when the fins (108a and 108b) are placed in the same or substantially the same position in a plane defined by a flow axis (141) and a vertical axis (151).

10. A fin sensor (102) as claimed in claims 1 to 6, wherein the at least one fin coupler (120a and/or 120b) is coupled at different locations on each of the fins (108a and 108b).

11. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area or projected area of a face of the at least one of the fins (108a and/or 108b) represented by a most downward (155) and a most upstream (143) quadrant portion of the at least one of the fins (108a and/or 108b).

12. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area or projected area of a face of the at least one of the fins (108a and/or 108b) represented by a most downward (155) and a most downstream (145) quadrant portion of the at least one of the fins (108a and/or 108b).

13. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an

area or projected area of a face of the at least one of the fins (108a and/or 108b) represented by a most downward (155) and a most upstream (143) corner of the at least one of the fins (108a and/or 108b).

14. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to one or more of the fins (108a and/or 108b) in an area or projected area of a face of at least one of the fins (108a and/or 108b) represented by a most downward (155) and a most downstream (145) corner of at least one of the fins (108a and/or 108b).

15. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area or projected area of a face of the at least one of the fins (108a and/or 108b) represented by a central one ninth portion of the at least one of the fins (108a and/or 108b).

16. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area of a face of the at least one of the fins (108a and/or 108b) represented by an area or projected area defined by a middle one third portion in a vertical axis (151) and an upstream (143) one third portion of the at least one of the fins (108a and/or 108b).

17. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area of a face of the at least one of the fins (108a and/or 108b) represented by an area or projected area defined by a middle one third portion in a vertical axis (151) and a downstream (145) one third portion of the at least one of the fins (108a and/or 108b).

18. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area of a face of the at least one of the fins (108a and/or 108b) represented by an area or

projected area defined by an upward (153) one third portion and upstream (143) one third portion of the at least one of the fins (108a and/or 108b).

19. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area of a face of the at least one of the fins (108a and/or 108b) represented by an area or projected area defined by an upward (153) one third portion and downstream (145) one third portion of the at least one of the fins (108a and/or 108b).

20. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area of a face of the at least one of the fins (108a and/or 108b) represented by an area or projected area defined by a downward (155) one third portion and an upstream (143) one third portion of the at least one of the fins (108a and/or 108b).

21. A fin sensor (102) as claimed in claims 1 to 10, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one of the fins (108a and/or 108b) in an area of a face of the at least one of the fins (108a and/or 108b) represented by an area or projected area defined by a downward (155) one third portion in the vertical axis (151) and downstream (145) one third portion of at least one of the fins (108a and/or 108b).

22. A fin sensor (102) as claimed in claims 1 to 21, wherein the at least one fin coupler (120a and/or 120b) is coupled to the first fin (108a) and the second fin (108b) in a manner that increases the axial stiffness of immersed elements of the fin sensor (102).

23. A fin sensor (102) as claimed in claims 1 to 22, wherein the fins (108a and 108b) have fin protrusions (114a and 114b) that protrude through apertures in the base (106), the transducers (104a and 104b) being coupled to the fins (108a and 108b) at the fin protrusions (114a and 114b).

24. A fin sensor (102) as claimed in claim 23, wherein the base (106) has an immersion side (342) and ~~an~~ a non-immersed external side (344), the fin protrusions (114a and 114b) protruding through the base (106) to the external side (344).

25. A fin sensor (102) as claimed in claim 24, wherein the fin protrusions (114a and 114b) have corresponding segments, wherein corresponding segments are segments that at least partially align in a cross axis (131).

26. A fin sensor (102) as claimed in claim 24, wherein the transducers (104a and 104b) are each coupled to two corresponding segments.

27. A fin sensor (102) as claimed in claims 1 to 26, wherein the at least one fin coupler (120a and/or 120b) is coupled to the fins (108a and 108b) on ~~an~~ a non-immersed external side of the base (106).

28. A fin sensor (102) as claimed in claims 23 to 26, wherein the at least one fin coupler (120a and/or 120b) is coupled to at least one fin protrusion (114a or 114b) of the fin protrusions (114a or 114b).

29. A fin sensor (102) as claimed in claims 25 and 26, wherein the at least one fin coupler (120a and/or 120b) is coupled to a segment of the at least one fin protrusion (114a or 114b).

30. A fin sensor (102) as claimed in claims 1 to 29, wherein the at least one fin coupler (120a and/or 120b) is coupled to the fins (108a and 108b) at a position downward (155) of a coupling between the fins (108a and 108b) and the at least two transducers (104a and 104b).

31. A fin sensor (102) as claimed in claims 1 to 30, wherein the at least one fin coupler (120a and/or 120b) is coupled to the fins (108a and 108b) on ~~an~~ a non-immersed external side (344) of the base (106) at a position closer to the base (106) than a location on the fins (108a and/or 108b) at which the transducers (104a-c) are coupled.

32. A fin sensor (102) as claimed in claim 1 to 30, wherein the at least one fin coupler (120a and/or 120b) is coupled to the fins (108a and 108b) on the non-immersed external side (344) of the base (106) at a position closer to a location on the fins (108a and/or 108b) at which the transducers (104a-c) are coupled than to the base (106).

33. A fin sensor (102) as claimed in ~~claims 1 to 32~~claim 23, wherein the fin protrusions (114a and 114b) have corresponding segments, wherein corresponding segments are segments that at least partially align in a cross axis (131).

34. A fin sensor (102) as claimed in claim 33, wherein the transducers (104a and 104b) are each coupled to two corresponding segments.

35. A fin sensor (102) as claimed in claims 1 to 34, the at least one fin coupler (120a and/or 120b) including a first fin coupler (120a) and a second fin coupler (120b), the first fin coupler (120a) coupled to the fins (108a and 108b) at a location upstream of a location at which the second fin coupler (120b) is coupled to the fins (108a and 108b).

36. A fin sensor (102) as claimed in claims 1 to 35, wherein ~~the~~ a sensing transducer (104a) is coupled to the fins (108a and 108b) upstream of where the driving transducer (104b) is coupled to the fins (108a and 108b).

~~37. A fin sensor (102) as claimed in claims 1 to 36, the base (106) being a varying base (306) that has varying hardness.~~

~~38. A fin sensor (102) as claimed in claim 37, the varying base (306) having a softer portion in a middle of the varying base (306) and harder portions on edges of the varying base (306), the middle and the edges being the middle and edges of the varying base (306) in a cross axis (131).~~

~~39. A fin sensor (102) as claimed in claims 37 and 38, the varying base (306) being thinner in the middle than on the edges.~~

~~40. A fin sensor (102) as claimed in claim 39, the varying base (306) having varying material composition along the cross axis (131).~~

~~41. The fin sensor (102) as claimed in claims 37 to 40, the varying base (306) having softer material in the middle of the varying base (306) and harder material on the edges of the varying base (306) in the cross axis (131).~~

~~42. A fin sensor (102) as claimed in claims 1 to 41, further comprising a balance rib (118) that is coupled to one or more of the base (106) and a base coupler (116), the balance rib (118) being configured to at least partially restrict motion of the base (106) in a vertical axis (151) along a middle portion of the base (106), the middle portion of the base (106) being a portion defined by the middle of a cross axis (131).~~

~~43~~37. A fin sensor (102) as claimed in claims 1 to ~~42~~ 36, further comprising a meter electronics (112), one of the at least two transducers (104a and 104b) being a driving transducer (104b), the meter electronics (112) configured to transmit data representing commands to the driving transducer (104b) to drive the fins (108a and 108b) in one or more of an in-phase (IP) mode and an out-of-phase (OOP) mode.

~~44~~38. A fin sensor (102) as claimed in claim ~~43~~37, another of the at least two transducers (104a and 104b) being a sensing transducer (104a), the meter electronics (112) receiving signal data from the sensing transducer (104a) to maintain drive modes using a controlled feed-back loop.

~~45~~39. A fin sensor (102) as claimed in claims 1 to ~~44~~38, wherein one or more of at least one of the at least one fin coupler (120a and/or 120b) and at least one of the fins (108a and/or 108b) having a coupling element, the coupling element configured to couple the at least one of the at least one fin coupler (120a and 120b) to the at least one of the fins (108a and/or 108b) via the coupling element.

~~46. A fin sensor (102) as claimed in claims 1 to 44, wherein the first fin coupler (120a) has a coupling element, and the first fin (108a) has another coupling element (120b), wherein the coupling element is complementary to the another coupling element such that the coupling element is configured to couple to the another coupling element.~~

~~47~~40. A fin sensor (102) as claimed in ~~claims 45 and 46~~ claim 39, wherein the coupling element is a recess in the first fin (108a).

~~48~~41. A fin sensor (102) as claimed in claims 1 to ~~47~~40, wherein the at least one fin coupler (120a and/or 120b) is an element of neither the base (106) nor any of the at least two transducers (104a-c).

~~49~~42. A fin sensor (102) as claimed in claims 1 to ~~47~~40, wherein the at least one fin coupler (120a and/or 120b) influences the motion of the fins (108a and 108b) differently from the manner in which the base (106) influences the motion of the fins (108a and 108b) and from the manner in which the at least two transducers (104a-c) influence the motion of the fins (108a and 108b).

~~50~~43. A fin sensor (102) as claimed in claims 1 to ~~49~~42, wherein the at least one fin coupler (120a and/or 120b) is coupled to neither the base (106) nor any of the at least two transducers (104a-c).

~~51. A fin sensor (102) with a base (106) and a balance rib (118), the base (106) coupled to a first fin (108a) and a second fin (108b), the fin sensor (102) further having at least two transducers (104a and 104b) coupled to the fins (108a and 108b), the balance rib (118) being coupled to one or more of the base (106) and a base coupler (116).~~

~~52. A fin sensor (102) as claimed in claim 51, the balance rib (118) configured to at least partially restrict motion of the base (106) in a vertical axis (151) along a middle portion of the base (106), the middle portion of the base (106) being a portion defined by the middle of a cross axis (131).~~

~~53. A fin sensor (102) as claimed in claim 52, the balance rib (118) coupled to the base (106) at the middle portion of the base (106).~~

~~54. A fin sensor (102) as claimed in claims 52 and 53, the balance rib (118) coupled to the middle portion of the base coupler (116).~~

~~55. A fin sensor (102) as claimed in claims 52 to 54, the balance rib (118) configured to at least partially prevent net motion of the fins (108a and 108b) in a vertical axis (151).~~

~~56. A fin sensor (102) as claimed in claims 51 to 55, the balance rib (118) coupled to the base (106) between the first fin (108a) and the second fin (108b).~~

~~57. A fin sensor (102) as claimed in claims 51 to 56, the balance rib (118) coupled to the base (106) at a position between a position on the base (106) at which the first fin (108a) is coupled or is to be coupled and a different position on the base (106) at which the second fin (108b) is coupled or is to be coupled, on the cross axis (131)~~

~~58. A fin sensor (102) as claimed in claim 57, wherein the balance rib (118) is coupled equidistant from the position and the different position on the cross axis (131).~~

~~59. A fin sensor (102) as claimed in claims 51 to 58, wherein the balance rib (118) is coupled to the base (106) such that a centerline (198) of the balance rib (118) is parallel to a flow axis (141).~~

~~60. A fin sensor (102) as claimed in claim 51 to 58, wherein the balance rib (118) is symmetrical, in at least one axis, about a centerline (198).~~

~~61. A fin sensor (102) as claimed in claims 51 to 60, the balance rib (118) having a thickness in the cross axis (131) of the balance rib (118) on one or more of a downstream (145) end of the balance rib (118) and an upstream (143) end of the balance~~

~~rib (118) that is less than a thickness in the cross axis (131) of a middle portion of the balance rib (118).~~

~~62. A fin sensor (102) as claimed in claims 51 to 60, the balance rib (118) having a thickness in the cross axis (131) of the balance rib (118) on one or more of a downstream (145) end of the balance rib (118) and an upstream (143) end of the balance rib (118) that is greater than a thickness in the cross axis (131) of a middle portion of the balance rib (118)~~

~~63. A fin sensor (102) as claimed in claims 51 to 62, further comprising at least one fin coupler (120a and/or 120b), the at least one fin coupler (120a and/or 120b) coupled to the fins (108a and 108b).~~

~~64. A fin sensor (102) as claimed in claims 51 to 63, the base (106) being a varying base (306) that has varying hardness.~~

~~65. A fin sensor (102) as claimed in claim 64, the varying base (306) having a softer portion in a middle of the varying base (306) and harder portions on edges of the varying base (306), the middle and the edges being the middle and edges of the varying base (306) in a cross axis (131).~~

~~66. A fin sensor (102) as claimed in claims 64 and 65, the varying base (306) being thinner in a middle of the varying base (306) than on edges of the varying base (306) along a cross axis (131).~~

~~67. A fin sensor (102) as claimed in claims 64 to 66, the varying base (306) having varying material composition along the cross axis (131).~~

~~68. A fin sensor (102) as claimed in claim 67, the varying base (306) having softer material in a middle and harder material on edges along the cross axis (131).~~

~~69. A fin sensor (102) as claimed in claims 64 to 68, wherein a portion of the varying base (306) between the fins (108a and 108b) along the cross axis (131) is softer than the portions of the varying base (306) between each of the fins (108a and 108b) and the edges of the varying base (306) in the cross axis (131).~~

~~70. A fin sensor (102) as claimed in claims 64 to 69, wherein the softer portion (314) and the harder portions (310 and 312) may be formed by coupling at least one of the fins (108a and 108b) closer in the cross axis (131) to an edge of the varying base (106) than to the balance rib (118).~~

~~71~~44. A method of making a fin coupler assembly for determining flow characteristics having at least one fin (108a and/or 108b) and at least one fin coupler (120a and/or 120b), comprising forming a fin coupler assembly in which the at least one fin (108a and/or 108b) is coupled to the at least one fin coupler (120a and/or 120b); and comprising the steps of:

coupling a first fin coupler (120a) of the at least one fin coupler (120a and/or 120b) to both of the fins (108a and 108b); and

coupling a second fin coupler (120b) of the at least one fin coupler (120a and/or 120b) to both of the fins (108a and 108b),

wherein the first fin coupler (120a) is coupled at least one position that is or will be at a different point along a flow axis (141) of at least one position at which the second fin coupler (120b) is coupled.

~~72. A method as claimed in claim 71, wherein the coupling assembly is formed by molding, such that the at least one fin coupler (120a and/or 120b) is formed already coupled to the at least one fin (120a and/or 120b).~~

~~73. A method as claimed in claims 71 and 72, the forming a fin coupler assembly comprising forming a fin coupler (120a), wherein the fin coupler (120a) is different from a base (106) and a transducer (104a-c).~~

74. A method as claimed in claims 71 to 73, the forming a fin coupler assembly further comprising:

forming a fin (108a) of the at least one fin (108a and/or 108b); and

coupling a fin coupler (120a) of the at least one fin coupler (120a and/or 120b) to the fin (108a).

75. A method as claimed in claim 74, wherein the coupling the fin coupler (120a) to the fin (108a) comprises coupling the fin coupler (120a) to the fin (108a) at a position closer to a free edge (199) of the fin (108a) than a position of the fin (108a) that is coupled or is to be coupled to a base (106).

76. A method as claimed in claim 71, the method comprising:

coupling a first fin coupler (120a) of the at least one fin coupler (120a and/or 120b) to both of the fins (108a and 108b); and

coupling a second fin coupler (120b) of the at least one fin coupler (120a and/or 120b) to both of the fins (108a and 108b),

wherein the first fin coupler (120a) is coupled at least one position that is or will be at a different point along a flow axis (141) of at least one position at which the second fin coupler (120b) is coupled.

77. A method as claimed in claim 71, wherein the forming a fin coupler assembly comprises:

forming one or more of the at least one fin (108a and/or 108b) and the at least one fin coupler (120a and/or 120b) with a coupling element configured to facilitate a coupling between the at least one fin (108a and/or 108b) and the at least one fin coupler (120a and/or 120b).

78. A method as claimed in claims 71 to 77, wherein the at least one fin (108a and/or 108b) is coupled to the at least one fin coupler (120a and/or 120b) on a portion of the at least one fin coupler (120a and/or120b) that resides or will reside on an immersion side (342) of a base (106)

~~79. A method as claimed in claims 71 to 77, wherein the at least one fin (108a and/or 108b) is coupled to the at least one fin coupler (120a and/or 120b) on a portion of the at least one fin coupler (120a and/or120b) that resides or will reside on an external side (344) of the base (106).~~

~~80. A method as claimed in claims 71 to 79, further comprising forming a balance rib (118) and coupling the balance rib (118) to one or more of the base (106) and a base coupler (116).~~

~~81. A method as claimed in claims 71 to 80, wherein the base (106) is formed as a varying base (306) with varying hardness.~~

~~82~~45. A method as claimed in ~~claims 71 to 81~~claim 44, wherein the at least one fin coupler (120a and/or 120b) is formed as a rod shaped fin coupler (220a).

~~83~~46. A method as claimed in ~~claims 71 to 81~~claim 44, wherein the at least one fin coupler (120a and/or 120b) is formed as a brace bar (220c).

~~84~~47. A method as claimed in ~~claims 71 to 81~~claim 44, wherein the at least one fin coupler (120a and/or 120b) is formed as a strip shaped fin coupler (220b).

~~85~~48. A method as claimed in ~~claims 71 and 72~~claim 44, further comprising forming a base (106) and coupling the base (106) to the fins (108a and 108b).

~~86~~49. A method as claimed in claim ~~85~~48, wherein the fins (108a and 108b) are formed having fin protrusions (114a and 114b) that protrude through apertures in the base (106), at least one transducer (104a and/or 104b) being coupled to the fins (108a and 108b) at the fin protrusions (114a and 114b).

~~87~~50. A method as claimed in claim ~~86~~49, wherein the fin protrusions (114a and 114b) are formed with corresponding segments, wherein corresponding segments are

segments that at least partially align in a cross axis (131), the at least one fin coupler (120a and/or 120b) coupled to the fins (108a and 108b) at the corresponding segments.

~~88. A method as claimed in claims 85 to 87, wherein the base (106) is formed as a varying base (306) with varying hardness.~~

~~89. A method as claimed in claim 88, wherein the varying base (306) is formed as softer in a middle portion of a varying base (306) than edges of the varying base (306) in a cross axis (131).~~

~~90. A method as claimed in claim 89, further comprising coupling the balance rib (118) to one or more of the base (106) and a base coupler (116).~~

~~91. A method as claimed in claim 90, wherein the at least one fin coupler (120a and/or 120b) is coupled to the fins (108a and 108b) in at least one location in a first direction (133) from the balance rib (118) and in at least one location in a second direction (135) of the balance rib (118).~~

~~92~~51. A method as claimed in claims ~~71~~44 to ~~91~~50, further comprising:

forming a meter electronics (112) and communicatively coupling the meter electronics (112) to transducers (104a and/or 104b and/or 104c), the meter electronics (112) having a processor and memory, the memory configured to store commands and data for the processor to execute operations; and

configuring the meter electronics (112) to drive in in-phase and out-of-phase modes.

~~93. A method of making a balanced base assembly, comprising:~~

~~forming a base (106);~~

~~forming a balance rib (118); and~~

~~coupling the balance rib (118) to one or more of the base (106) and a base coupler (116).~~

~~94. A method as claimed in claim 93, wherein the base (106) is formed as a varying base (306).~~

~~95. A method as claimed in claim 94, wherein the varying base (306) is formed by varying a thickness of the varying base (306) in molding or by cutting away a portion of the varying base (306).~~

~~96. A method as claimed in claims 94 and 95, wherein the thickness is varied such that a middle of the varying base (306) is thinner than the edges of the varying base (306) in a cross axis (131).~~

~~97. A method as claimed in claims 94 to 96, wherein the varying base (306) is formed by varying the material from which the varying base (306) is composed, at least along a cross axis (131).~~

~~98. A method as claimed in claim 97, wherein the varying the material comprises composing the at least part of the varying base (306) of a material in the middle of the varying base (306) that is softer than the material at the edges of the varying base (306) on the cross axis (131).~~

~~99. A method as claimed in claims 93 to 98, wherein the forming the balance rib (118) comprises forming the balance rib (118) as an elongate member~~

~~100. A method as claimed in claims 93 to 99, wherein the coupling the balance rib (118) to the base (106) comprises coupling the balance rib (118) to the base (106) at a position in the middle of the base (106) on a cross axis (131).~~

~~101. A method as claimed in claims 93 to 100, wherein the coupling the balance rib (118) to the base (106) comprises coupling the balance rib (118) to the base (106) at a position between a position on the base (106) at which a first fin (108a) is coupled or is to be coupled and a different position on the base (106) at which a second fin (108b) is coupled or is to be coupled, the position and the different position on a cross axis (131).~~

~~102. A method as claimed in claim 101, wherein the coupling the balance rib (118) to the base (106) at a position between a position on the base (106) at which a first fin (108a) is coupled or is to be coupled and a different position on the base (106) at which a second fin (108b) is coupled or is to be coupled on a cross axis (131) comprises coupling the balance rib (118) equidistant from the position and the different position on the cross axis (131).~~

~~103. A method as claimed in claims 93 to 102, wherein the coupling the balance rib (118) to the base (106) comprises coupling the balance rib (118) to the base (106) with a centerline (198) of the balance rib (118) parallel to a flow axis (141)~~

~~104. A method as claimed in claim 103, wherein the forming the balance rib (118) comprises forming the balance rib (118) such that the balance rib (118) is symmetrical, in at least one axis, about a centerline (198).~~

~~105. A method as claimed in claim 104, wherein the forming the balance rib (118) further comprises forming the balance rib (118) such that a thickness in the cross axis (131) of the balance rib (118) on one or more of a downstream (145) end of the balance rib (118) and an upstream (143) end of the balance rib (118) is less than a thickness in the cross axis (131) of a middle portion of the balance rib (118) in a flow axis (141).~~

~~106. A method as claimed in claim 104, wherein the forming the balance rib (118) further comprises forming the balance rib (118) such that a thickness in the cross axis (131) of the balance rib (118) on one or more of a downstream (145) end of the balance rib (118) and an upstream (143) end of the balance rib (118) is greater than a thickness in the cross axis (131) of a middle portion of the balance rib (118) in a flow axis (141).~~

~~107. A method as claimed in claims 93 to 106, further comprising forming fins (108a and 108b) and coupling the fins (108a and 108b) to the base (106)~~

~~108. A method as claimed in claim 107, the method further comprising:~~

~~forming at least one fin coupler (120a and/or 120b); and~~

~~coupling the at least one fin coupler (120a and/or 120b) to the fins (108a and 108b)~~

~~109. A method as claimed in claim 108, wherein the at least one fin coupler (120a and/or 120b) is coupled to a first of the fins (120a) in a first direction (133) from the balance rib (118) and the at least one fin coupler (120a and/or 120b) is coupled to a second of the fins (120b) in a second direction (135) from the balance rib (118).~~

~~110. A method as claimed in claims 107 to 108, wherein at least one of the fins (108a and/or 108b) is coupled to the base (106) at a position that is in a first direction (133) from the balance rib (118), and the position is closer to an edge of the base (106) that is in a first direction (133) from the balance rib (118) than to the balance rib (118), in a cross axis (131).~~

~~111. A method as claimed in claims 107 to 108, wherein at least one of the fins (108a and/or 108b) is coupled to the base (106) at a position that is in a first direction (133) from the balance rib (118), and the position is further from an edge of the base (106) that is in a first direction (133) from the balance rib (118) than from the balance rib (118), in a cross axis (131).~~

~~112. A method as claimed in claims 107 to 111, further comprising:~~

~~forming a meter electronics (112) and communicatively coupling the meter electronics (112) to transducers (104a and/or 104b and/or 104c), the meter electronics (112) having a processor and memory, the memory configured to store commands and data for the processor to execute operations; and~~

~~configuring the meter electronics (112) to drive the fins (108a and 108b) in in-phase and out-of-phase modes.~~

~~113~~52. A method of using a fin sensor (102) for determining flow characteristics with a driving transducer (104b) to drive vibrations in a first fin (108a) and a second fin (108b), the first and second fin (108a and 108b) coupled to a base (106), the fin sensor

(102) having at least one sensing transducer (104a) to receive response data, the method comprising at least partially restricting, by at least one fin coupler (120a and/or 120b), a motion of a first fin (108a) relative to a motion of a second fin (108b); and

wherein a first fin coupler of the at least one fin coupler (120a) has a coupling element, and the first fin (108a) has another coupling element (120b), wherein the coupling element is complementary to the another coupling element such that the coupling element is configured to couple to the another coupling element.

~~114~~53. A method as claimed in claim ~~113~~52, the at least partially restricting by at least one fin coupler (120a and/or 120b), a motion of a first fin (108a) relative to a motion of a second fin (108b) comprising at least partially restricting the motion of a free edge (199) of a first fin (108a) relative to a free edge (199) of a second fin (108b).

~~115~~54. A method as claimed in claims ~~113~~52 and ~~114~~53, the vibrations driven by the driving transducer (104b) to drive the fins (108a and 108b) in an out-of-phase (OOP) mode.

~~116~~55. A method as claimed in claim ~~115~~54, wherein the out-of-phase (OOP) mode represents a phase separation between the motion of the first fin (108a) and the second fin (108b) of about 180º.

~~117~~56. A method as claimed in claims ~~113~~52 to ~~116~~55, wherein the at least partially restricting, by the at least one fin coupler (120a and/or 120b), a motion of a first fin (108a) relative to a motion of a second fin (108b) comprises at least partially restricting the motion of the first fin (108a) at any site at which the at least one fin coupler (120a and/or 120b) is coupled to the first fin (108a) relative to the motion of the second fin (108b).

~~118~~57. A method as claimed in claims ~~113~~52 to ~~117~~56, wherein the at least one fin coupler (120a and/or 120b) does not directly restrict the movement of any element of the base (106), the at least one fin coupler (120a and/or 120b) not being coupled to or an element of the base (106).

~~119. A method as claimed in claims 113 to 118, the method further comprising, at least partially restricting the motion of the base (106) with a balance rib (118).~~

~~120. A method of using a fin sensor (102) with a driving transducer (104b) to drive vibrations in a first fin (108a) and a second fin (108b), the first fin (108a) and the second fin (108b) coupled to a base (106), the fin sensor (102) having at least one sensing transducer (104a) to receive response data, the fin sensor (102) having a balance rib (118), the method comprising at least partially restricting, by the balance rib (118), the motion of the base (106).~~

~~121. A method as claimed in claim 120, the at least partially restricting, by the balance rib (118), the motion of the base (106) comprising at least partially restricting a motion of the base (106) in a vertical axis (151) along a middle portion of the base (106), the middle portion being a portion defined by the middle of a cross axis (131).~~

~~122. A method as claimed in claims 120 and 121, the at least partially restricting, by the balance rib (118), the motion of the base (106) comprising at least partially preventing a net motion of the fins (108a and 108b) in a vertical axis (151).~~

~~123. A method as claimed in claim 122, the at least partially restricting, by the balance rib (118), the motion of the base (106) comprising at least partially preventing a net motion of the fin sensor (102) in a vertical axis (151).~~

~~124. A method as claimed in claims 120 to 123, the at least partially restricting the motion of the base (106), comprising at least partially restricting the base (106) at a position between a position on the base (106) at which the first fin (108a) is coupled or is to be coupled and a different position on the base (106) at which the second fin (108b) is coupled or is to be coupled, on the cross axis (131).~~

~~125. A method as claimed in claims 120 to 124, the at least partially restricting the motion of the base (106) comprising at least partially restricting the motion of the base~~

~~(106) at a position equidistant from the position and the different position on the cross axis (131).~~

~~126. A method as claimed in claims 120 to 125, the at least partially restricting the motion of the base (106) comprising at least partially restricting the motion of the base (106) at least along a linear portion of the base (106) that is parallel to a flow axis (141).~~

~~127. A method as claimed in claim 126, the at least partially restricting the motion of the base (106) comprising at least partially restricting the motion of the base (106) such that movement of one or more of a downstream (145) end of the base (106) and an upstream (143) end of the base (106) is restricted less than a middle of the base (106), the middle of the base (106) being the middle of the base (106) in the flow axis (141).~~

~~128. A method as claimed in claim 126, the at least partially restricting the motion of the base (106) comprising at least partially restricting the motion of the base (106) such that movement of one or more of a downstream (145) end of the base (106) and an upstream (143) end of the base (106) is restricted more than a middle of the base (106), the middle of the base (106) being the middle of the base (106) in the flow axis (141).~~