CLAIMS

1. A device for indicating a presence of a directional differential pressure between a first space and a second space separated from the first space by a barrier, the device permitting fluidic pressure connection between the second space and a pivot arm in the first space and a second space, the device comprising:

a first conduit arranged to extend through at least a portion of the barrier separating the first space and the second space;

a rotating base which is rotatable relative to the first conduit, wherein the rotating base rotates about a vertical axis;

a pivot arm arranged to form a fluidic pressure connection with the first conduit, the pivot arm rotatably attached to the rotating base to permit adjustment of an inclination of the pivot arm relative to a horizontal plane among a plurality of inclination angles in which a first, vertically lower region of the pivot arm is vertically lower than a second, vertically higher region of the pivot arm; and

at least one movable element disposed within the pivot arm and movable from the first, vertically lower region of the pivot arm to the second, vertically higher region of the pivot arm in response to a differential pressure between the first and second spaces.

2. A device as in claim 1, wherein the pivot arm is rotatably attached to the rotating base to permit adjustment of an inclination of the pivot arm within a plane.

3. A device as in claim 2, wherein the pivot arm is rotatably attached to the rotating base to permit adjustment of an inclination of the pivot arm within a vertical plane.

4. A device as in claim 1, wherein the first conduit, rotating base, and pivot arm form a passageway for fluid.

5. A device as in claim 1, wherein the rotating base pivots about the vertical axis.

6. A device as in claim 1, wherein the device indicates a presence of a threshold directional differential pressure.

7. A device as in claim 1, wherein the pivot arm includes a transparent or translucent conduit portion such that the movable element is viewable through the pivot arm.

8. A device as in claim 1, further comprising a sensor and an alarm, wherein the alarm sounds based on the sensor sensing the movable element.

9. A device as in claim 1, wherein the pivot arm rotates about a pivot arm axis, and further comprising a level configured to indicate whether the pivot arm axis is horizontal.

10. A device as in claim 9, wherein the level is positioned on the rotating base.

11. A device as in claim 1, further comprising a level positioned on the rotating base and configured to indicate whether the device is mounted to the barrier such that an axis of rotation of the rotating base is vertical.

12. A device as in claim 1, further comprising:

a housing plate configured to be mounted to the barrier; and

a level mounted to the housing plate to indicate whether the housing plate is set at a desired rotation about a roll axis which is perpendicular to the barrier.

13. A device as in claim 1, wherein the pivot arm comprises a second conduit through which the movable element moves, and the device further comprising a first end stop positioned at an end of the second conduit.

14. A device as in claim 13, wherein the end stop includes an opening.

15. A device as in claim 14, wherein the end stop opening and the movable element are sized and shaped such that the movable element closes the end stop opening when the movable element reaches the end of the second conduit.

16. A device as in claim 15, wherein the movable element is a ball.

17. A device as in claim 13, further comprising a second end stop positioned in the second conduit on an opposite side of the movable element as the first end stop.

18. A device as in claim 1, wherein the movable element is a ball.

19. A device as in claim 1, wherein the movable element is a piston.

20. A device as in claim 1, further comprising a differential set point indicator attached to the pivot arm.

21. A device as in claim 20, wherein the differential pressure set point indicator includes at least one of a bubble, a ball, a pivotally arranged member, a pendulum, a weighted member and a tip.

22. A device as in claim 1, further comprising an inclinometer attached to the pivot arm.

23. A device as in claim 1, wherein the pivot arm rotates about a horizontal axis regardless of the rotation of the rotating base.

24. A device as in claim 1, wherein the pivot arm rotates about a horizontal axis.

25. A device as in claim 1, wherein the pivot arm rotates about a horizontal axis for all rotations of the rotating base.

26. A device as in claim 1, wherein the first conduit is adjustable in length.

27. A device as in claim 1, wherein the first conduit and the rotating base form a passageway for a gas, and further comprising:

a transition region where the passageway is first surrounded by the rotating base when traveling in a direction toward the pivot arm, wherein the rotating base is arranged such that rotating the rotating base does not change a location of the transition region relative to the first conduit.

28. A device for indicating differential pressure between two spaces, the device permitting fluidic pressure connection of a first space and a second space separated by a barrier, the device comprising:

a first conduit arranged to extend through at least a portion of the barrier separating the first space and the second space;

a pivot arm fluidically connected to the first conduit and arranged to pivot relative to the first conduit to adjust an inclination of the pivot arm within a vertical plane and relative to a horizontal plane among a plurality of inclination angles in which a first, vertically lower region of the pivot arm is vertically lower than a second, vertically higher region of the pivot arm, wherein the first conduit and the pivot arm form a passageway for fluid;

a transition region where the passageway is first surrounded by the pivot arm when traveling in a direction toward the pivot arm, wherein the pivot arm is arranged such that pivoting the pivot arm within the vertical plane does not change a location of the transition region relative to the first conduit; and

at least one movable element disposed within the pivot arm and movable from the first, vertically lower region of the pivot arm to the second, vertically higher region of the pivot arm in response to a differential pressure between the first and second spaces.

29. A device as in claim 28, wherein the pivot arm is connected to the first conduit via a swivel pivot which permits yaw pivoting of the pivot arm.

30. A device as in claim 28, wherein the movable element comprises a ball.

31. A device as in claim 28, wherein the device permits fluidic pressure connection of a first space and a second space separated by a wall.

32. A device as in claim 28, wherein the transition region comprises a cylindrical connector wherein the pivot arm pivots about a pivot axis that is co-linear with or parallel to a center axis of the passageway at the transition region.

33. A device as in claim 28, further comprising a second conduit in a telescoping relationship with the first conduit such that a length of the device can be adjusted to fit a thickness of the barrier.

34. A device as in claim 28, further comprising a level positioned to indicate whether a pivot axis of the pivot arm is horizontal.

35. A device as in claim 28, further comprising a differential set point indicator attached to the pivot arm.

36. A device for indicating differential pressure between two spaces, the device permitting fluidic pressure connection of a first space and a second space separated by a barrier, the device comprising:

a first conduit arranged to extend through at least a portion of the barrier separating the first space and the second space;

a pivot arm fluidically connected to the first conduit and arranged to pivot relative to the first conduit about a pivot axis, wherein pivoting the pivot arm about the pivot axis adjusts an inclination of the pivot arm relative to a horizontal plane among a plurality of inclination angles in which a first, vertically lower region of the pivot arm is vertically lower than a second, vertically higher region of the pivot arm, and wherein pivoting the pivot arm about

the pivot axis does not change a direction of the pivot axis, wherein the first conduit and the pivot arm form a passageway for fluid;

a transition region where the passageway is first surrounded by the pivot arm when traveling in a direction toward the pivot arm, wherein the pivot arm is arranged such that pivoting the pivot arm within the vertical plane does not change a location of the transition region relative to the first conduit; and

at least one movable element disposed within the pivot arm and movable from the first, vertically lower region of the pivot arm to the second, vertically higher region of the pivot arm in response to a differential pressure between the first and second spaces.

37. A device as in claim 36, wherein the pivot arm is arranged such that when the pivot arm is pivoted about the pivot axis, the pivot arm remains in a vertical plane.

38. A device as in claim 36, wherein the pivot arm is pivotable between at least -30° and +30° relative to the horizontal plane.

39. A device as in claim 38, wherein the pivot arm is by no more than 90° relative to the horizontal plane.

40. A device as in claim 36, wherein the pivot arm is pivotable between at least -45° and +45° relative to the horizontal plane.

41. A device as in claim 40, wherein the pivot arm is by no more than 90° relative to the horizontal plane.

42. A device as in claim 36, wherein the pivot arm is pivotable between at least -60° and +60° relative to the horizontal plane.

43. A device as in claim 42, wherein the pivot arm is by no more than 90° relative to the horizontal plane.

44. A device as in claim 36, wherein the pivot arm is pivotable between at least 0° and +30° relative to the horizontal plane.

45. A device as in claim 36, wherein the pivot arm is pivotable between at least 0° and +45° relative to the horizontal plane.

46. A device as in claim 36, wherein the pivot arm is pivotable between at least 0° and +60° relative to the horizontal plane.

47. A device as in claim 36, further comprising a second conduit in a telescoping relationship with the first conduit such that a length of the device can be adjusted to fit a thickness of the barrier.

48. A device as in claim 36, further comprising a level positioned to indicate whether the pivot axis is horizontal.

49. A device as in claim 36, further comprising a differential set point indicator attached to the pivot arm.

50. A device for indicating differential pressure between two spaces, the device permitting fluidic pressure connection of a first space and a second space separated by a barrier, the device comprising:

a first conduit arranged to extend through at least a portion of the barrier separating the first space and the second space;

a pivot arm fluidically connected to the first conduit and arranged to pivot relative to the first conduit to adjust an inclination of the pivot arm within a vertical plane and relative to a horizontal plane among a plurality of inclination angles in which a first, vertically lower region of the pivot arm is vertically lower than a second, vertically higher region of the pivot arm;

a swivel connector, wherein the pivot arm is connected to the swivel connector, and the swivel connector is arranged to pivot about a vertical axis;

wherein the device forms a fluid flow passageway from the first conduit to an entrance of the pivot arm, and the pivot arm is arranged such that pivoting the pivot arm does not change a path of the fluid flow passageway from the first conduit to the pivot arm entrance; and

at least one movable element disposed within the pivot arm and movable from the first, vertically lower region of the pivot arm to the second, vertically higher region of the pivot arm in response to a differential pressure between the first and second spaces.

51. A device as in claim 50, further comprising a level positioned to indicate whether the pivot axis is horizontal, the level being positioned on the swivel connector.

52. A device as in claim 50, further comprising a level positioned to indicate whether the pivot axis is horizontal.

53. A device as in claim 50, further comprising a second conduit in a telescoping relationship with the first conduit such that a length of the device can be adjusted to fit a thickness of the barrier.

54. A device for indicating differential pressure between two spaces, the device permitting fluidic pressure connection of a first space and a second space separated by a barrier, the device comprising:

a first conduit configured to be in fluid pressure communication with a first space when the device is installed in a barrier separating the first space and a second space;

a second conduit having an opening that can permit fluid pressure communication between the second conduit and the second space when the device is installed in the barrier, wherein the second conduit is in fluid communication with the first conduit, and an angle of inclination of the second conduit is adjustable with respect to a horizontal reference plane such that a first region of the second conduit is vertically lower than a second, vertically higher region of the

second conduit, and the angle of inclination of the second conduit is adjustable within a plane; and

at least one movable element movable within the second conduit from the first, vertically lower region to the second, vertically higher region in response to a differential fluid pressure between the first and second spaces; wherein

an orientation of the second conduit is adjustable within a vertical plane;

the angle of inclination of the second conduit is adjustable independently from an angle of inclination of the first conduit and

the second conduit is rotatable by greater than 180°.

55. A device as in claim 54, wherein the second conduit is rotatable by at least 360°.

56. A device as in claim 54, wherein the conduit comprises a pivot arm, the pivot arm rotates about a pivot axis, and further comprising a level mounted to device to indicate whether the pivot axis is horizontal.