wherein the fluid ports communicate the fluid between the fluid channel and the back surfaces of the deformable regions;

a displacement device displacing a portion of the fluid through the fluid channel and the fluid ports to transition the deformable regions from the retracted state to the expanded state;

a first pressure sensor and a second pressure sensor detecting changes in fluid pressure within a portion of the fluid due to an input force applied to the tactile surface at a particular deformable region; and

a processor determining the particular deformable region to be the location of the input force based upon an analysis of the changes in fluid pressure detected by the first and second pressure sensors.

2. The user interface system of claim **1**, wherein the first and second pressure sensors detect pressure waves within a portion of the fluid and the processor analyzes the detected pressure waves to determine the origin of an impulse associated with the input force.

3. The user interface system of claim **1**, wherein the pressure sensors detect fluid pressure change rates within the fluid channel and the processor characterizes a fluid pressure change rate detected by the first pressure sensor, relative to the second pressure sensor, as a user input at a location that is the particular deformable region.

4. The user interface system of claim **1**, wherein the first pressure sensor detects a fluid pressure change rate within the fluid channel and the processor characterizes a change rate below a threshold change rate as a first input type and a fluid pressure change rate above the threshold change rate as a second input type.

5. The user interface system of claim **1**, wherein the first pressure sensor detects the magnitude of fluid pressure within the fluid channel and the processor characterizes a fluid pressure below a threshold pressure as a first input type and a fluid pressure above the threshold pressure as a second input type.

6. The user interface system of claim **1**, wherein the first pressure sensor detects the magnitude of fluid pressure within the fluid channel and the processor characterizes a fluid pressure maintained for a first period of time as a first input type and a fluid pressure maintained for a second period of time as a second input type.

7. The user interface system of claim **1**, wherein the first pressure sensor detects fluid pressure changes in the fluid channel at a first location and the second pressure sensor detects fluid pressure changes in the fluid channel at a second location different than the first location.

8. The user interface system of claim **1**, further comprising a valve arranged within the fluid channel and operable between:

an open state, wherein the displacement device displaces a portion of the fluid through the valve to transition a deformable region from the retracted state to the expanded state; and

a closed state, wherein the valve isolates the deformable region from a second deformable region to maintain the state of the deformable region independently of the second deformable region.

9. The user interface system of claim **1**, wherein the fluid channel includes a first end and a second end, wherein the displacement device displaces a portion of the fluid through the first end, and wherein the first pressure sensor is arranged substantially proximal to the first end and the second pressure sensor is arranged substantially proximal to the second end.

10. The user interface system of claim **9**, further comprising a valve, interposed between the fluid channel and the displacement device, operable in an open state and a closed state, wherein, in the closed state, the valve substantially retains a portion of the fluid within the fluid channel.

11. The user interface system of claim **10**, wherein the second end of the fluid channel is blind.

12. The user interface system of claim **9**, further comprising a third pressure sensor coupled to the fluid channel between the first and second pressure sensors.

13. The user interface system of claim **1**, wherein the substrate defines a substantially planar surface adjacent to the back surface of the tactile layer, and wherein the fluid channel and communicates the fluid through the substrate in a direction substantially parallel to the plane of the substrate.

14. The user interface system of claim **13**, wherein the fluid channel is a serpentine channel.

15. The user interface system of claim **13**, wherein the fluid ports communicate the fluid in a direction substantially normal to the planar surface of the substrate.

16. The user interface system of claim **15**, wherein the substrate comprises a first sub-layer joined to a second sub-layer, wherein the first sub-layer includes an elongated pocket that defines a portion of the fluid channel, and wherein the second sub-layer includes a plurality of through-bores that define the fluid ports.

17. The user interface system of claim **1**, wherein a portion of the first pressure sensor is joined to the back surface of the tactile layer at a deformable region.

18. The user interface system of claim **1**, wherein a portion of the first pressure sensor is arranged within the substrate.

19. The user interface system of claim **1**, wherein, in the retracted state, the displacement device maintains the deformable regions substantially flush with the undeformable region by minimizing the difference between fluid pressure within the fluid channel and the ambient air pressure.

20. The user interface system of claim **1**, further comprising a touch sensor coupled to the substrate and detecting a user touch on the tactile surface.

21. The user interface system of claim **20**, wherein the touch sensor detects the location of a user touch on the tactile surface at the undeformable region and the pressure sensors and the processor detect the location of the user touch on the tactile surface at the deformable regions.

22. The user interface system of claim **1**, further comprising a display coupled to the substrate opposite the tactile layer and outputting an image through the tactile layer to the user.

23. The user interface system of claim **22**, wherein the image is substantially aligned with a deformable region.

24. The user interface system of claim **22**, wherein the fluid, the substrate, and the tactile layer are substantially transparent.

25. The user interface system of claim **22**, wherein the display outputs an image of a keyboard including all letters of an alphabet, wherein each letter is aligned with a different deformable region and each deformable region defines an input region associated with a unique letter.

26. The user interface system of claim **1**, wherein the substrate defines a support surface that limits deformation of a deformable region inward toward the substrate.