

[0012] According to other embodiment of the invention, there is provided a display input system comprising: a display input device including: a display unit having a flexibility; a first form change detection unit having a flexibility, and being able to detect a deformation ascribed to the flexibility as a change in a electrical property; and a second form change detection unit laminated with the form change detection unit, the second form change detection unit having a flexibility, and being able to detect a deformation ascribed to the flexibility as a change in a electrical property, a display driving unit that supplies a display signal to the display unit; and a signal judging unit that judges a input data based on the change in a electrical property in the first form change detection unit, wherein the changes in the electrical property of the first and second form change detecting units being different when the deformation is added to the display device, and an input of a first data that depends on a direction of the deformation is enabled.

[0013] In the specification the term "deformation" includes form changes of at least "bending", "rounding", "turning over" and "torsion".

[0014] According to the invention, based on the completely different concept from the prior art, the display input device with which analog data input by easy and intuitive operation can be offered, and various display input system comprising the same can be also offered, and thus the merit on industry is great.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0015] The present invention will be understood more fully from the detailed description given herebelow and from the accompanying drawings of the embodiments of the invention. However, the drawings are not intended to imply limitation of the invention to a specific embodiment, but are for explanation and understanding only.

[0016] In the drawings;

[0017] FIG. 1 is a conceptual diagram showing the display input system according of the embodiment of the invention;

[0018] FIGS. 2A and 2B are schematic diagrams which illustrate the fundamental sectional structures of the display input devices of the embodiment;

[0019] FIG. 3 is a schematic diagram showing the principle for inputting data in an analog fashion in the embodiment;

[0020] FIG. 4 is a schematic diagram showing the case where the bending is added to the initial state 30A to create the final state 30C;

[0021] FIG. 5 is a schematic diagram showing a principle for distinguishing an input by the direction of the bending in the embodiment;

[0022] FIG. 6 is a conceptual diagram which illustrates the structure of the form change detection unit 30;

[0023] FIGS. 7A and 7B are schematic diagrams explaining a function of the perception layer 35 made of a resistance material;

[0024] FIG. 8 is graph which illustrates the response characteristic of a cell shown in FIGS. 7A and 7B;

[0025] FIGS. 9A through 9C are conceptual diagrams explaining the states where bending is added to a form change detection unit 30;

[0026] FIG. 10 is a schematic diagram which illustrates the circuit structure of the form change detection unit 30;

[0027] FIG. 11 is a schematic diagram which illustrates another circuit structure of the form change detection unit 30;

[0028] FIG. 12 is a schematic diagram showing another structure of the form change detection unit 30;

[0029] FIGS. 13 is a schematic diagram which shows a structure where the form change detection unit 30 is divided;

[0030] FIGS. 14A and 14B are also schematic diagrams showing the display input devices where the form change detection units 30 are divided;

[0031] FIG. 15 is a schematic diagram which illustrates the display input device with which two or more form change detection units are laminated;

[0032] FIG. 16 shows the structure where the analog signal outputs AS1 and AS2 can be taken out from these form change detection units 30A and 30B, respectively;

[0033] FIG. 17 shows the structure where signal processing of the analog signal outputs AS1 and AS2 in a processing part SP is carried out, and an analog output AS and a digital output DS are obtained;

[0034] FIG. 18 is a schematic sectional diagram showing an example of a laminated type display input device;

[0035] FIG. 19 shows the structure where analog signal outputs AS1 and AS2 obtained from each of form change detection units 30A and 30B can be processed, and an analog output AS and a digital output SD can be obtained;

[0036] FIG. 20 is a schematic diagram showing a display input device of the example of the invention combined with a touch panel;

[0037] FIG. 21 shows that the outputs can be separately used;

[0038] FIG. 22 shows that a digital output DS from a touch panel 50 and an analog output AS1 from a form change detection unit 30 can be processed, and an analog output AS2 can also be obtained;

[0039] FIGS. 23A through 25C are process sectional views showing the principal parts of the manufacturing process of the liquid crystal display used in this example;

[0040] FIG. 26 is a schematic diagram showing the cross-sectional structure of the display input device of the example;

[0041] FIG. 27 is a schematic diagram showing the plane arrangement relation of the principal part;

[0042] FIG. 28 is a block diagram of the display input system of the fifth example of the invention;

[0043] FIG. 29 shows an outline view of the display input system;

[0044] FIG. 30 shows that a user 200 holds the right-hand side of the display unit 20 (that is, display input system) with the right hand, adds bending to left-hand side to turn over a page;