

the surface. The selectable zones **14** or “pushbutton keys” are characterized by a solidification, which may be sensed, in an otherwise gallery-like mass, which may easily be expelled by a finger, under the smooth surface of the film. The solidification is brought about by a change in viscosity of the Theological fluids.

[0088] Rheological fluids include an emulsion of oils and polarizable particles which orientate themselves under the influence of electrical or magnetic fields and thus influence the flow properties of the emulsion. The rheological fluid is moved into the areas of the selectable zones **14**—representing a telephone keypad by a corresponding actuator system under the influence of electrical or magnetic fields. The fluids are stable in terms of sedimentation of the polarizing particles the application temperature range in a motor vehicle.

[0089] Each selectable zone **14** on the operator control panel **12** corresponds to a selectable menu item or a functionality. Different functionalities of the operator control panel which may be structured in a manner which may be sensed in a tactile fashion may therefore each be configured as a menu structure. In the exemplary application illustrated, the functionalities of a telephone keypad are assigned to the selectable zones. The “pushbutton keys” are located such that they may be sensed by touch between the functionless areas in which the Theological fluid may be expelled by a finger because there are no electrical or magnetic fields acting there. However, the areas which support functions may be represented surrounded or delimited by solidified areas as well as by nonsolidified areas.

[0090] In a resistive sensor system of the touch-sensitive operator control surface, both the sensing of a pushbutton key and functional triggering or confirmation of an input may be implemented, for example, by various pressure threshold values. With a sensor system which is based on the change in resistance, there may be the advantage compared to a capacitive method that contact with gloves may also be detected without difficulty.

[0091] Functional triggering may also be carried out by electromagnetic switches, with a pressure on the operator control panel which is necessary to trigger a function being kept greater than the pressure for sensing the solidified areas. For this purpose, the operator control panel **2** is mounted, for example, on a plurality of pressure-sensitive electromechanical switching elements, optionally on just one such element with additional suitable guides for the operator control panel, so that a pressure point over the entire surface may be implemented for the operator control panel **2**. By pressing on the operator control panel **2** which is mounted in a pressure-sensitive manner, it is possible not only to trigger functions or confirm inputs but, depending on the operator control situation, it is possible, for example, by pressing down the entire operator control panel too, also to trigger the switching over of the operator control mode from, for example, handwritten input into a Scroll mode (as described with respect to FIG. 2).

[0092] If the operator control device **11** is used for selectable inputs, a position recognition device is used to determine in which zone, for example, a user’s finger is located. So that reliable differentiation between the various selectable zones is possible when the operator control panel is operated with a finger, the areas which support meaning or functions may also be separated from one another by intermediate areas without meaning—a mute circuit.

[0093] The geometric arrangement of selectable zones **14**—illustrated in FIG. 5—on the operator control panel **12**

is to be understood only as exemplary; the selectable zones may also assume other forms, like in the exemplary embodiment illustrated in FIG. 1, depending on the structuring and/or mobility of the actuator system, so that various functionalities may be represented in an appropriate manner on the operator control panel.

[0094] The pushbutton key **5** in the housing **3** of the example embodiments **1** and **11** of the operator control devices is used, in terms of hierarchically organized operator control menus, to represent special functions such as, for example, to implement an Escape function for jumping back rapidly from lower operator control menu levels into higher operator control menu levels or for deleting the input which has been respectively made last.

[0095] Various implementations are possible for the implementation of delete or Escape functions: briefly pressing the Escape key **5** once may, depending on the particular current operator control mode, bring about the deletion of the last input or, when the input box is empty or not present, return the system to the initial control state of the system which is currently selected for operator control. Actuation of the Escape key **5** three times briefly in succession or once for a long time may be implemented, for example, as a manner of aborting the operator control of the respective function and returning to the start menu or main menu. However, in order to implement various special functions such as, for example, a jump back into a superordinate menu or deletion of the last input, it is also possible to provide a plurality of pushbutton keys in the housing.

[0096] In the housing **3** of the operator control devices **1** and **11**, it is also possible to accommodate the following arrangement for operating the operator control device under the operator control panel next to the electronics which are associated with the operator control panel and have the purpose of sensing a finger position: the actuator system for reconfiguring the surface shape, the switching elements for implementing the pressure point of the operator control panel and connections to an electronic control system with which the operator control device and the functions of the operator control panel are controlled.

[0097] FIG. 6 illustrates the representation of the functional assignment of the operator control panel **12** illustrated in FIG. 5 on a display device **30** with additional information for user prompting, for orientating the user about the arrangement and significance of the individual, selectable menu items—for example, the functionality of a telephone keypad—as well as further information for menu prompting, for example, an input box **33** for orientating the user about the inputs which have been made.

[0098] For the purpose of optimum user prompting, the functional assignment of the operator control panel **34** which is valid for an operator control situation is represented on the display device in a manner which corresponds to the arrangement of the selectable zones on the operator control panel. If the position detection device detects a finger contact in the region of a selectable zone, the area on the display corresponding to this zone is highlighted visually in its visual representation in comparison with the other illustrated selection possibilities. The input box **33** gives the user an overview of inputs which have already been made.

[0099] FIGS. 7a and 7b are cross-sectional views through the operator control panel illustrated in FIG. 5 in the flat state with an electro-rheological fluid in a reservoir underneath the touch-sensitive film **20** which is formed for detecting the