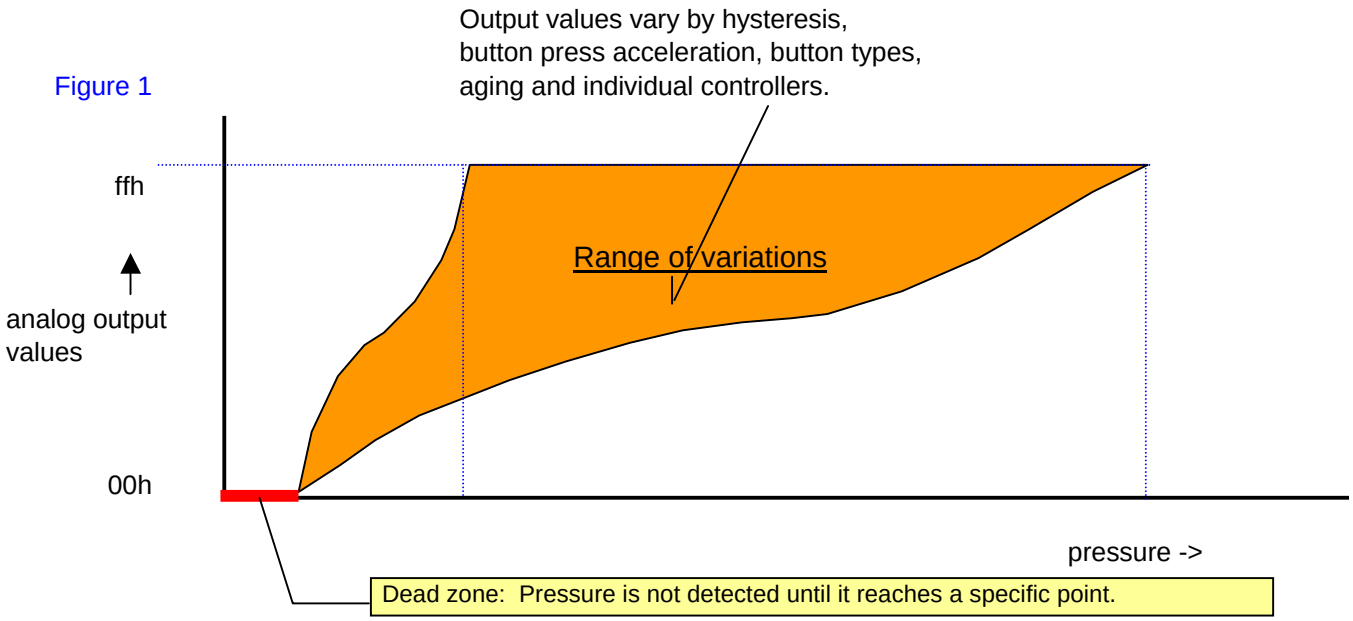
The analog button function of the Analog Controller (DUALSHOCK 2)

Software Development Dept.

Overview of the analog button function

With the analog button function of the Analog Controller (DUALSHOCK 2), output values of the twelve analog buttons can be obtained in 255 levels. The pressure on buttons and the analog output values obtained by a software show curved lines rather than linear lines as shown in Figure 1.

Figure 1



As shown in Figure 1, output values of the analog button vary because of reasons described later. Therefore, the analog button function should be used in applications so that these variations do not affect specifications of controllers.

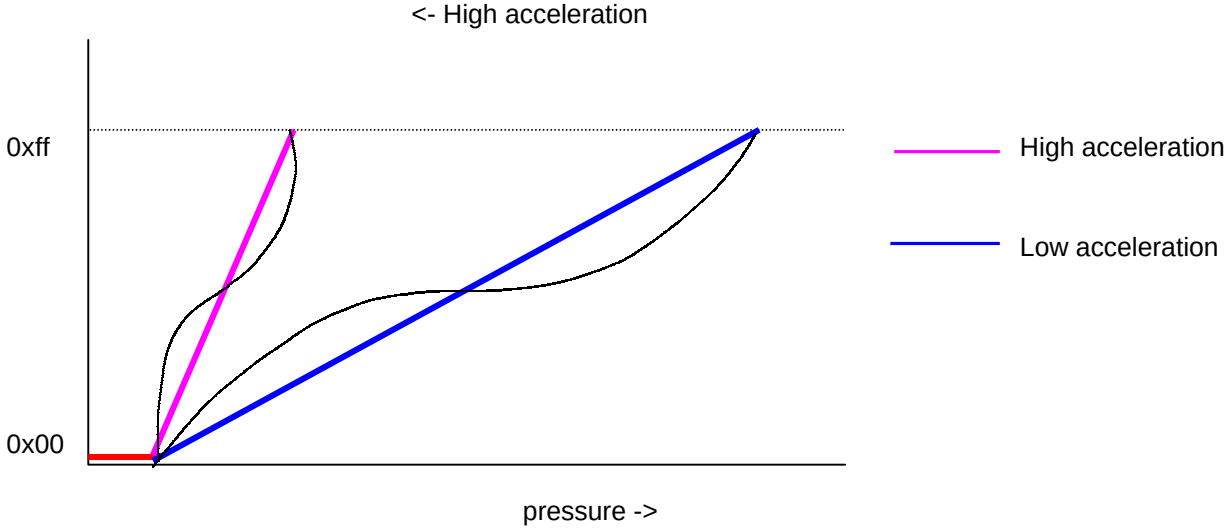
The red line in Figure 1 indicates a dead zone. This is an idle range extending from the point at which a button is pressed to that of the data obtained.

Since the dead zone is guaranteed by the hardware, it is not necessary to implement the center position calibration. When there is no dead zone, the hardware is considered to be broken.

Variations by button press acceleration

A characteristic of the analog output varies depending on the button press acceleration. As shown in Figure 2, the analog output curve becomes steeper with the increase of the button press acceleration.

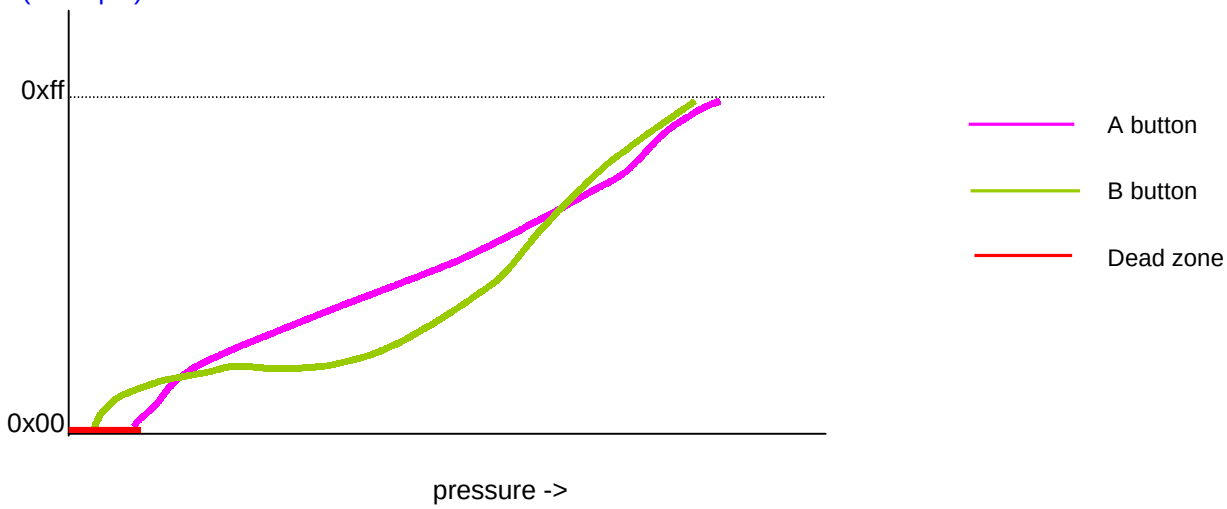
Figure 2



Variations by button types

The characteristic of the analog output varies depending on button types as shown in Figure 3. Each button has an individual characteristic.

Figure 3 (Example)



Variations by hysteresis

The analog button has a structural hysteresis characteristic.
As shown in Figure 4, characteristics of the analog output values are not the same when a button is pressed and released.

Figure 4