



CONTENT MEASUREMENT SYSTEM

FOR VENTILATED OR PRESSURISED TANKS

Castello offers a user-friendly way to represent the pressure measurement at the bottom of a tank as the quantity of remaining liquid. At the push of a button, the micro-controller performs the calculations using the information of the tank shape and dimensions and displays the remaining tank content quantity on the clearly legible 5-digit LED display in the desired unit (litres, gallons etc.).

The unit is configured using a PC and the easy-to-use software so that the filling level, which determines the pressure, can be converted into an appropriate filling quantity. First the tank shape is selected, then the tank dimensions and the specific gravity of the liquid are entered. It contains the most current tank shapes. The program covers the most common tank shapes, but also enables any shape by entering the parameters into a specified table.

The exclusive use of absolute pressure sensors in the Castello system eliminates the use of capillary vented cables with all the problems associated with a gauge pressure measurement. The Castello housing integrates an air pressure sensor, ranged between 0,8 bar and 1,2 bar absolute. The sensors to measure the hydrostatic pressure at the bottom of the tank are calibrated from 0,8 to 1,8 bar abs for tanks up to 5 m in height, and 0,8 to 2,3 bar abs for tanks up to 10 m in height. The pressure difference, calculated by the micro-controller, is the relative hydrostatic pressure.

The content of a pressurised tank is determined using the difference between the measurements from two absolute pressure sensors located at the top and bottom of the tank.

The overall accuracy of the system of 2 mbar is achieved using a computerised calibration and compensation procedure for the pressure sensors. The coefficients for this calculation are stored in EEPROMs in the sensors. These are retrieved by the microprocessor at each measurement and employed within the equations to calculate the pressure values. The Castello housing and hydrostatic sensor can be interchanged at will.

It is also possible to connect a standard 3-wire transmitter or high-precision digital transmitter (Series 36 X) that can be configured to an accuracy of 0,02 %FS over a range of 0 to 50 °C, a true representation of which is displayed by the Castello.

The power supply to the system (8 to 28 V) can be provided externally or internally using a 9 V battery. The display is obtained by pressing the button on the front, and the value appears for a configurable duration. The Castello has two switch outputs with configurable functionality and threshold values. An external power supply must be provided if the switch outputs are used.

CASTELLO



CA1



Series 23 Q



Series 26 Q



